DOCUMENT RESUME

ED 341 588 SO 020 948

TITLE Improving Linkages between Research and Education Reform: Report of a Regional Seminar. Report from the Regional Seminar on Educational Research in Asia and the Pacific (Tokyo, Japan, October 18-November 2, 1989).

INSTITUTION National Inst. for Educational Research, Tokyo (Japan).

PUB DATE Jan 90

NOTE 133p.

PUB TYPE Collected Works - Conference Proceedings (021)

EDRS PRICE MF01/PC06 Plus Postage.

DESCRIPTORS Educational Change; *Educational Research; Elementary Secondary Education; Foreign Countries; Higher Education; International Education; *International Educational Exchange; International Programs

IDENTIFIERS *Asia Pacific Region

ABSTRACT

This Regional Seminar was convened for the purpose of providing a forum for educational researchers to exchange information and experiences about educational research and its relationship to educational reform in the countries of the Asian Pacific region. The Regional Seminar was attended by 17 participants from 16 countries in Asia and the Pacific. The countries represented were: Australia, Brunei Darussalam, China, Fiji, Indonesia, Japan, Laos, Malaysia, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Thailand, and Western Samoa. The report summarizes the seminar in six sections: (1) Introduction; (2) Agencies Involved and Other Aspects of Educational Research; (3) Impact of Educational Research on Major Educational Reforms; (4) Strategies for Promoting and Strengthening Educational Research; (5) Role of Educational Research for the Development of Education at Present and in the Future in Asia and the Pacific Region; and (6) Recommendations. Two appendices are included; one lists the seminar's participants, the other presents the reports of the participating countries. (DB)

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Improving Linkages between Research and Educational Reform

Report of a Regional Seminar

Section for International Co-operation in Education
National Institute for Educational Research (NIER)
Tokyo, Japan

January 1990

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Published by

the Section for International Co-operation in Education,

National Institute for Educational Research (NIER)

5-22 Shimomeguro 6 Chome, Meguro-ku, Tokyo Japan

RW/89/500

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1. Introduction

The Regional Seminar on Educational Research in Asia and the Pacific was organized by the National Institute for Educational Research (NIER) of Japan from 18 October to 2 November 1989. This seminar was one in a series launched in 1979 to promote educational research in the region of Asia and the Pacific. The beginning of this series, devoted to the consideration of educational research to the development of education by heads of educational research institutions in the region, was marked by a seminar on educational research in relation to educational reform held in 1979, followed by a seminar for the training of young educational researchers in 1981, a workshop on the development of research concerning the implementation and evaluation of reforms of educational content and methods in 1982, a seminar on educational research with special reference to the exchange of research outcomes in 1983, a seminar on the contribution of interdisciplinary research to the development of education in 1984, a seminar on educational assessment in 1986, and a special seminar on education which was held in commemoration of the twentieth anniversary of the Unesco-NIER Regional Programme for Educational Research in Asia and the Pacific in 1988.

The present Seminar was convened for the purpose of providing a forum for educational researchers to exchange information and experiences with respect to educational research and its relationship to educational reform in the countries of the region.

Objectives of the Seminar

The specific objectives of the Seminar were:

1) to review the state of educational research and practice in the participating countries; and

2) to identify recent trends in respect of educational research and major educational reform in the countries of the region.

Participation

The Regional Seminar was attended by seventeen participants from 16 countries in Asia and the Pacific. The countries represented were: Australia, Brunei Darussalam, China, Fiji, Indonesia, Japan, Laos, Malaysia, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Thailand and Western Samoa. The list of participants is given in Annex I.

Seminar Officers

After the inaugural session, the Seminar elected the following office bearers:

Chairperson: Prof. Millicent Poole (Australia)

Improving Linkages between Research and Educational Reform

Vice-Chairperson: Prof. Abdul Rahman N. Mughol (Pakistan)

Rapporteur: Mrs. Adoracion M. Del Prado (Philippines)

Procedures and Outcomes

The Seminar met in plenary sessions for the presentation of country reports (see Annex II of this report), and in working groups and plenary to synthesize experiences.

The strategy adopted for the Seminar was the presentation of country reports followed by discussion of issues and the preparation of synthesis of country experiences and issues. In the courses of the discussion that immediately followed the presentations of the country papers, certain issues which needed clarification were thoroughly deliberated on. One was the issue on major reforms. In spite of the lengthy discussion on this, no consensus on what comprises major or minor reforms was made. This is because what was considered a major educational reform in one country was only a minor reform in another country or *vice versa*.

The other issue was whether or not there were linkages between results of educational research and reforms. It was agreed that linkages between research findings and reforms were evident. It was, however, emphasized that identifying which educational reforms were direct effects of research findings was difficult considering that certain reforms were partly or mainly instituted as a result of political decisions on the part of the policy/decision makers.

Educational research has various meanings ranging from policy-oriented, developmental and basic. The participants spent some time discussing the various meanings as they felt that the issue should be thoroughly explored before there could be any agreement as to what constitutes educational research as a guide to discussion at the Seminar.

During the discussion, a few participants mentioned that educational research might be a field of research that is directed towards the investigation of educational problems and issues to suggest conclusions and find solutions. In spite of the thorough deliberations on the issue, the participants felt that there is no clear cut definition of what educational research is.

Other issues discussed but not elaborated on this report were those relating to the quality of research findings *vis-a-vis* qualification and/or credibility of the researchers, assessing the actual impact of research, the monitoring of research activities and the changing trends of research.

A draft report was then presented at the concluding session of the Seminar and was adopted with some modifications. The suggested modifications and corrections have been incorporated in this final report.

2. Agencies Involved and Other Aspects of Educational Research

The types of agencies involved in educational research in each of the participating countries fell within three categories: government agencies, tertiary institutions, and non-government agencies and professional associations. [This information is presented in Table 1.] From time to time, international agencies such as the United Nations agencies, the Organization for Economic Co-operation and Development (OECD), and the Southeast Asian Ministers of Education Organization (SEAMEO) as well as private external organization such as the Carnegie Foundation and the World Education Foundation are also involved in the undertaking of research in many of the participating countries. These organizations either fund or contract out research to agencies in the countries concerned.

The Agencies Involved

1. Government Agencies

Government agencies for the provision of educational research exist in all participating countries. These agencies mainly located within ministries of education exist at the national level, and in four countries, at the regional or provincial levels. In some of the participating countries, educational research at the national level is undertaken by more than one government agency.

Various sectors of education are involved in educational research. These sectors include research for planning, policy making and legislation, curriculum development, educational technology, education and culture, education services, and special education.

2. Tertiary Institutions

In the countries of the region, educational research is undertaken in tertiary institutions. Overall, educational research activities within universities predominate. However, research activities are also undertaken in other tertiary institutions, such as in teacher training colleges, in more than one half of the countries.

3. Non-government Agencies

The involvement of non-government agencies in educational research varies in extent and nature among countries. In three countries, such agencies do not exist, while in three other countries educational research activities in the non-government sector are carried out only by professional associations. In other countries, research institutes or councils have been established.

Table 1: Research Agencies

	Government	Tertiary Institution	Non-government/Professional Agencies
Australia	[Federal] - Department of Employment, Education and Training - Australian Research Council (Humanities & Social Science Division) - Australian Education Council [State] - State Ministries or Departments of Education	- Universities and Colleges	- Australian Council for Educational Research (ACER) - Institutes of Educational Research - Professional Associations - Philanthropic trusts
Brunei Darussalam	- Research Unit of Planning Research & Development, Ministry of Education - Curriculum Development of Ministry of education	- University	
China	- Department of Policy Making & Legislation of State Education Commission (SEDC) - State Council Group for Educational Research - Research Institutes of Ministry concern	- Universities and Colleges	- National Research Centre for Educational Development (NCEDR) - Central Institute of Educational Research (CIER) - National Leading Group for Educational Research & Planning (NLDERP) - Local Educational Research Institutes - Professional Associations
Fiji	- Ministry of Education	- Universities and Colleges	- Professional Associations
Indonesia	- Centres in Office of Educational and Cultural Research and Development, Ministry of Education & Culture - Centre of Educational Technology of Ministry of Education & Culture	- Institutes of Education - Faculties of Education within universities	- Professional Associations

Table 1: Research Agencies (continued)

	Government	Tertiary Institution	Non-government/Professional Agencies
Japan	[National Level] - Ministry of Education - National Institute for Educational Research (NIER) - National Institute of Special Education (NISE) - National Institute of Multi-media Education [Prefectural Level] - Local Boards of Education - Research Institutes	- Universities and Colleges	- Professional Associations - Private Research Institutions
Laos	- Ministry of Education & Sports - Research Institute for Educational Science (RIES) - Other departments within Ministry of Education & Sports - National Committee for Educational Reform	- Institute of Pedagogy	
Malaysia	- Educational Planning & Research Division (EPRD) & other divisions of Ministry of Education	- Universities - Other Tertiary Institutions	- Educational Professional Associations
Nepal	- Curriculum, Textbook & Supervision Development Centre, Ministry of Education & Culture - National Education Committee - Other divisions of Ministry of Education & Culture	- Research Centre for Educational Innovation & Development (CERID) - Research Centre for Applied Sciences & Technology (CEDA) - Research Centre for Nepal & Asian Studies (CENAS) - Research divisions of T/U - Institute of Education	- New Educational Reform Associates (NEW ERA) - Integrated Development System (IDS) - Nepal Centre for Community Education
New Zealand	- Ministry of Education	- Universities and Colleges	- New Zealand Council for Educational Research (NZCER) - Professional Associations
Pakistan	- Ministry of Education	- Universities - Colleges of Education - Education Extension Centres	- Institutional Agencies - Professional Agencies
Papua New Guinea	- Research & Evaluation Unit of Education Department	- University - Teachers Colleges	- National Institute of Research

Table 1: Research Agencies (continued)

	Government	Tertiary Institution	Non-government/Professional Agencies
Philippines	- Department of Education, Culture & Sports - Institute of Science & Mathematics Education Development	- Universities and Colleges	- Summer Institute of Linguistics - Fund for Assistance to Private Education - Professional Institutions
Rep. of Korea	- Ministry of Education - National Institute of Educational Evaluation - Research Institutes of City & Provincial Board of of Education - Academy of Korean Studies	- Universities and Colleges	- Korean Educational Development Institute (KEDI) - Korean Institute of Research for Behavioral Science - Research Council for University Education - Professional Associations
Thailand	- National Education Commission (NEC) - Departments within Ministry of Education - Regional Offices of Education - Provincial Offices of Education	- University Institutions - Teachers Colleges	- Thailand Development Research Institute (TDRI)
Western Samoa	- Department of Education (Planning & Research Section)	- University and Colleges	

Also involved in each of these countries from time to time are universities from other countries, international agencies such as United Nations agencies, SEAMEO and OECD, and private external organizations such as the Carnegie Foundation and the World Education Foundation.

Setting the Research Agenda

By and large, the research agenda or the issues to be researched, are determined by the government agencies, the organizations, or the institutions concerned. However, non-governmental agencies and tertiary institutions often respond to contract research opportunities provided by government research agencies. To this extent they may indirectly respond to the agenda or research priorities of the government agencies.

In some countries the government, although not setting the agenda, exercises some control over what is being researched within its own agencies. This may be done through determining national priorities for educational research, or by requiring approval to be given to the agenda determined by its agencies.

The Funding of Educational Research

In general, funding for educational research comes from the government. This was especially true if the agency was a division or section of the ministry or department of education. The participants from a few countries pointed out that where the set-up of the research agency was a separate department by itself, the funding it received was more generous than when it was a division or section of a ministry or department.

Funding for government tertiary institutions undertaking educational research also originates from the government, while private colleges and universities fund their own research as in the case of the Philippines. Tertiary institutions may also receive funding through engaging in contract research, often contracted to government agencies.

Non-government agencies receive funding from various sources in most countries. For research institutes and councils, the government is the primary source of funds. A small proportion of funding may be self-generated through the sale of publications and test materials. Other funds originate from universities, national and international agencies as well as through sponsorship from corporations or philanthropic trusts.

Professional agencies engaged in educational research, depending on their status, either get funding from the government through co-operative research, from private funding agencies or from the fund of the associations or organizations.

Types and Areas of Research, and Research Methodology

The participants considered the three aspects of research: types of research, areas of research and research methodology.

1. Types of Research

In terms of the utilization of research findings, various research studies being conducted by the research agencies mentioned above can be classified into the following categories:

a) Basic Research

Basic research is a systematic and rigourous investigation aimed at the discovery of the previously unknown phenomena and the development of explanatory theories related to education, which usually has little or indirect impact on educational practices or policy decision in the short term. In the long term, it may influence practice or production of instructional materials.

b) Applied Research

Applied research is the application of basic research to new situations or problems. It can be developmental or action-oriented in its emphasis. It is usually aimed at improving, through one means or another, policy, administration and practice such as in evaluation and curriculum development. Findings

of this type of research provide answers on why, how and when theories developed through basic research are applied in the areas towards which the investigation was directed.

i) Policy- and Administration-Oriented Research

Research of this type generally provides data and information on matters which will be used to make decisions on new educational policies, to implement policies and improve existing policies. While policy research includes, among others, evaluative, policy planning and development, action or development research, and feasibility studies, administrative research is more concerned with the collection of routine data and information from various levels in the education system for planning and monitoring the implementation of educational programmes. This type includes the (a) assessment of students' achievement, (b) collection of routine statistical data such as enrollment, and (c) other routine monitoring and evaluative studies.

ii) Practice-Oriented Research

This type of research provides data and information on classroom- or school-based factors such as (a) the implementation, improvement, or the development of innovative teaching-learning practices, (b) development of instructional materials, and (c) development of other new or innovative educational practices.

It should be noted, however, that a particular research study needs not necessarily fall exclusively within one of the type of research mentioned above.

2. Areas of Research

Research conducted by the agencies mentioned above covers a wide range of areas in education.

The research studies conducted referred to by the participants can be categorized into:

a) Educational System

This area covers research topics on educational structure, finance, educational administration, management and planning.

b) Curriculum

Research topics covered within this area include curriculum content and structure, teaching and learning processes, educational assessment, teaching aids and textbooks.

c) Students and School

Research in this area includes topics on enrollment, school climate, and students' background and characteristics.

d) Teacher Related Issues

Research studies covered in this area include teacher education and training, quality of teachers, teachers' performance, and other issues such as student-teacher ratio, certification, grading, admission/entry requirements, recruitment and placement, and teachers' incentives and motivations.

e) Physical Plant and Facilities

Research of this nature covers studies on school mapping, expansion of the number of new schools, provision and improvement of school equipment and educational facilities.

f) Educational Outputs

This research area includes topics on the relationship between the quantity and quality of school leavers and the entry requirements for higher education and for the labour market.

3. Research Methodology

In conducting research, various methods have been employed, depending on the nature and objective of the particular research being undertaken. These include case studies, surveys, experimental studies, developmental studies, action research, evaluative studies, and documentary studies.

3. Impact of Educational Research on Major Educational Reforms

Various areas of educational activity where reforms have been undertaken by countries were looked into by Seminar participants. Each participant was asked to list only the major reforms undertaken. It was evident from the responses that there was difficulty in defining what was meant by 'major'. This is attributable to the differing perspectives and context each participant attaches to the concept and the extent of reforms. Eventually this impasse was left to each participant to define individually, depending on whether 'major' was looked at functionally or phenomenologically.

Each participant was then asked to indicate the impact of educational research on each of these educational reforms using a five-point scale. The following describes a consolidated and aggregated product of the listing but depicting only the areas which show great and some impact of research. It should be noted that the listing is at best an impressionistic record of impact on reform actions due to lack of access to actual reference sources.

Decentralization of Education

This appears to be a major reform action for most participating countries. Moves towards decentralization of education are the result from the view that effectiveness of implementation of educational programmes could be better realized when the local, grass-root personnel participate in the problem-solving and decision-making process, especially where it concerns issues of local context. Hence, power, authority and control of certain aspects of administration and supervision are delegated to local (state, district, province) educational leaders to facilitate actions on emergent matters.

Another rationale for decentralization is that local problems are best assessed and acted upon immediately by local personnel. To refer matters upwards through the channels of the educational bureaucracy for decisions would not only delay solutions, but may also compound the problems.

Varying degrees of decentralization as a reform have been reported. These range from complete delegation of authority in the case of China, Laos, Nepal, New Zealand, Pakistan, Papua New Guinea and Thailand, to only certain aspects of administration and supervision as in Malaysia and the Philippines. The experiences of Australia, Japan, New Zealand and the Republic of Korea show movement towards school-based management where school principals are given autonomous control of their schools, while in Indonesia the movement is for decentralization of the administration of the higher education sector. In the case of the Republic of Korea, the government is promoting a plan to create local education tax to replace the existing national education tax to enable the local government to carry out its responsibility for education.

Universalization of Education

Major reforms in this area in some countries like Fiji and Indonesia, and to a lesser extent China and Thailand, are extending the number of

primary schooling years from six to nine years, and emphasizing compulsory basic education of nine years in the case of China. Some other countries are trying to achieve universalization of their education system in the non-formal sector. These reform actions have been based on prior research and feasibility studies to lend credibility and justify the reforms.

Restructuring of the Educational Organization

Reform action in this area has been reported by Australia, China, Nepal, New Zealand, Pakistan, Papua New Guinea, the Philippines and Western Samoa with the objective of achieving greater co-ordination and manageability of the educational organizational structure. Australia, while promoting the school-based management approach has at the same time established national curriculum goals and has undergone major restructuring at the tertiary level (Unified National Scheme). Fiji and Western Samoa on the other hand are into the concept of 'zoning' for the management of their educational systems.

It was the general feeling of participants that educational research has little or no impact in this area. However, a few countries mentioned that research had a major impact on the reforms.

Computerization of Management of Educational Information System

The reform in this area parallels the rapid development and the use of modern educational technology in the classroom. While computer education is espoused to be taught either extensively or selectively via the curriculum, use of computer technology as a means of managing the educational information system is being taken advantage of extensively by a few countries. Since ventures of this kind would incur substantial expenses a few countries that have introduced it did so on the foundation of research and analysis of the cost benefits. Whatsoever is the case, it appears that current management of education is striving hard to achieve efficiency and effectiveness by having access to quick retrieval and storage of information through computerization, as seen from the experiences of most participating countries. A few countries did some cost benefit analysis of the use of computers based on the experiences of other countries.

Curriculum Evaluation, Implementation and Innovation

The majority of participants indicated that the school curriculum is one area in which active educational reforms are taking place. In most of the reform actions, educational research has shown great impact and has played a significant role in determining the contents of curriculum, the degree of intensity of reforms, i.e. whether they involved a total top-down renovation and shake-up of the curriculum or affected only certain facets, in the direction of curriculum reform implementation.

Most of the reforms in this respect were aimed at qualitative improvements of the teaching-learning process in the classrooms through the revisions and modifications of the contents. It is an exercise to update particular syllabus items for some, while for others it represented a total over-

haul of the curriculum for all levels of schooling to suit to the changes and new conditions of society and the environment.

Vocational education, work experience programmes and preparation of pupils for the workplace are imbued into the design of China's multi-curriculum. This feature is common to Australia, Japan, Malaysia, Nepal and Pakistan. In Papua New Guinea, Republic of Korea and Thailand, the curriculum was modified to be more flexible and to conform with the needs of the local and provincial population. In Brunei Darussalam, Malaysia and the Philippines, the curriculum was formulated to reflect more of the national aspirations.

Educational Testing, Evaluation and Examination

In this area of educational activity, educational research has quite an impact on the reforms undertaken, particularly with respect to the development of test-item banks, the introduction of various testing techniques, the coordination of administration of examinations, and the streamlining the standards of performance. For an educational activity where a high degree of accountability, reliability and integrity is expected, such as in the conduct and administration of examinations, most countries undertake reforms in this area based on valid and concrete research findings.

Educational Technology

Access to educational technology innovations is not simply wanting to be up-to-date, but mainly for the purpose of providing reinforcement and effectiveness of students' learning in the classroom. Teachers should be able to adjust their teaching tasks so as to be more creative with the various teaching aids and equipment. Bearing in mind the objective of maximizing outcomes of students' learning, countries undertaking reforms in this area do so cautiously and supported by initial case studies, pilot projects and feasibility assessments. This is because the reforms into materials and equipment incur high costs.

Some countries suffice their needs with simple indigenous resource materials production and utilization. Teaching modules and packages are prepared on this basis while others go further by utilizing all the possibilities made available by the radio and television media to supplement classroom instructions by the teacher. Countries of the latter include Indonesia, Laos, Malaysia, Nepal, Pakistan, the Philippines, Republic of Korea and Thailand. Some countries such as Australia, Malaysia and Nepal have established regional resource centres and trained their teachers in the use of educational technology hardware and software, while in Indonesia and Pakistan, distance education has been introduced.

Other Curriculum-related Reforms

Curriculum related reforms of significance with which educational research has impact are limited only to a few countries. Some of these include the preparation, production, distribution and utilization of textbooks, the introduction of computer education, and translating the improvements and in-

roads of pedagogy into classroom practice where certain subjects are innovatively taught to bring about qualitative improvements in learning outcomes.

Physical Plant and Facilities

A substantial number of countries have undertaken reforms pertaining to the physical and layout aspects of school buildings. Countries which did not state major reform at this time are Australia, the Philippines and Thailand.

The reforms undertaken in this regard included steps to expand the number of schools because of expanding pupil enrollments. Alternatively, schools may be split into double sessions of morning and afternoon for separate sections of the school population because of limited space. However, in some countries all this comes under only one school administration.

School mapping is actively pursued as a reform in six countries to identify the location and feasibility of building schools in relation to an area's needs. Some of these mapping exercises involved large-scale research studies utilizing a multi-disciplinary approach. Other reforms cover the provision of equipment and improving the facilities to schools. Some countries close down and merge two or three neighbouring schools because of falling enrollment in one area, while some countries have complete design plans as to the standard design and structure of the school building.

Higher Education and Human Resource Development

New Zealand, Papua New Guinea and Thailand do not have any reform activity in this aspect. In Australia, universities, colleges of advanced education (CAEs) and institutes of technology have been brought into the Unified National Scheme of Higher Education involving fewer consolidated institutions. In other countries, the issue of higher education needs and the development of human resources in preparation and anticipation of the country's needs for skilled and trained manpower represents an active reform area.

Reform activities related to this take the form of increasing the number of tertiary institutions of learning, changing the entrance examination system into the universities, improving the general quality of tertiary education in course contents. Some countries make special provisions for the training and development of skilled manpower in the overall plan of managing the labour supply.

There are also countries which are reducing the number of their tertiary institutions for one reason or another, consolidation, amalgamation and co-ordination. Countries also made increases in research grants to the universities when affordable, and in some the open university concept has been introduced to provide distance education as an overall effort to increase the educational level of the population at large. There was a quite substantial contribution of educational research in this area of major reform.

Students and Schools

Some aspects considered as reforms in this area were difficult to justify as major reforms. These actions are basically routine administrative procedures carried out as system maintenance or sustenance activities. Examples are the collection of data on the total system, such as enrollment and participation, retention and drop-out rates of pupils, and number of physical facilities. These data are required for projections, planning exercises, and also for evaluation and monitoring.

What constitutes reform actions of the whole procedures of data collection in most countries involved is in the streamlining, and systematic and more co-ordinated compilation and retrieval of the data and information. Some countries have recourse to computerization such that now the educational system has a more representative and authoritative data bank which the planners and decision makers of educational activities can rely upon confidently.

Reform actions were mentioned pertaining to student related factors. These include either new initiatives or the enhancement of original programmes such as student morale and discipline; co-curricular activities which include sports and academic-based programmes; students' health and welfare; the conduct of studies into students' socio-economic status and parental backgrounds so that ameliorative services can be provided for the needy and disadvantaged group of students such as by having free textbooks or textbook loan schemes, food and nutrition programmes, scholarship, and also guidance and counseling activities.

Other reform actions are the result of studies on school climate and effectiveness, with which programmes are provided to strengthen the weak schools. Effectiveness of schools is also sought by strengthening the leadership capabilities of school headmasters and principals by giving them training and in-service courses as well as other professional development activities on various aspects of school administration and curriculum leadership. The schools' administrative set-ups may also experience restructuring to improve efficiency and to involve wider participation in decision making among teachers at the school level.

All these reforms, though minor for some countries, are major for others. The demand for education is increasing in the participating countries and they have undertaken research to reform the system and delivery of services. This goes for almost all the countries participating. In Fiji, Papua New Guinea and Western Samoa, it has been reported that enrollment and participation rates of pupils at the elementary level have increased. In other countries, such as Australia and Japan, the increase extends as far as to the upper secondary level.

Teachers

Research studies which have contributed to reform with regards to teachers and teacher-related matters included the further systematization of data collection on teachers, similar to that of data collection on students. Data on teachers are required for the purpose of monitoring and planning.

Projections were made on actual number of teachers required, qualification on entry to pre-service training, subject specialization, age and gender of teachers. These data have implications for the long-term planning of each country as regard preparation and training, deployment strategies to regions and schools, emolument and remuneration factors, etc. Teacher-related factors where research has been done also covered aspects on teachers' morales, incentive and motivation characteristics, their service structure and wage schemes.

As a result of research, improvements have been made in the various countries with one kind of reform or another affecting teachers. Most countries aspire to having enough sufficiently trained teachers - quantitatively and qualitatively - for current needs which actually is difficult to achieve. The service of temporary teachers has to be resorted to and this affects the quality of instruction. However, efforts to bring about qualitative improvements of teachers seemed to be the central preoccupation of countries. This is to ensure that quality of schooling is not jeopardized because of shortage or under-qualification.

Some countries have extended pre-service training of teachers to two or three years as is done in Australia, Brunei Darussalam, Indonesia, Laos, Malaysia, New Zealand and Papua New Guinea. In Japan, the teacher certificate system has been revised as a part of overall educational reforms currently undertaken. Some countries like Nepal and Pakistan have also introduced the teacher training programmes for developing quality education for the on-the-job teachers. In some countries, reforms took the form of physical expansion like the building of additional teacher training colleges and institutions, and the supply of equipment and facilities. Improvements are also made to the quality of course contents for the teachers. Courses are provided on new advancements in pedagogy and teaching practice like in pupil learning strategies, child-oriented teaching strategies, and at the integrated development of pupils to include the cognitive, affective and psychomotor aspects.

Courses are also provided as reform strategies for teachers in matters like school library administration, school resource centre administration and utilization, guidance and counselling, sports administration and games coaching. All these are aimed at the qualitative improvements of teachers. Active countries in this area include Australia, Brunei Darussalam, Malaysia, Pakistan and Thailand.

As regards qualitative improvements for lecturers and teachers in higher education institutions, the reforms are planned to be provided for by the relevant and respective institutions concerned. This, however, is done to reflect the expected manpower needs and requirements of each country, and related to its human resource development.

Summary and Conclusion

It is evident from the preceding report that the educational systems in almost all of the participating countries in the Asia and the Pacific region had instituted major reforms in the structural and operational aspects within the system. These reforms were institutionalized either because of the in-

fluence of research findings or political decisions.

It was, however, apparent from the country reports presented and the ensuing discussions that findings of educational research greatly influenced the institutionalization of some educational reforms in the educational systems of the participating countries. Most countries of the region reported that educational research made major and to a lesser degree minor impacts on the educational reforms.

It can, therefore, be concluded that the findings of educational research do influence the educational systems in more ways than one, and that educational research has an important contribution to make if educational systems are continued to be dynamic.

4. Strategies for Promoting and Strengthening Educational Research

Introduction

As is evident in the previous sections, educational research contributed much to educational reforms in most of the participating countries. Where it has had minimum impact, it has been due to one or more of the following reasons:

1) Research findings do not actually answer the problems of the issues at hand.

2) Research findings are not easily understood by policy makers because they are written in research jargon/style/terminology - not in laymen's language.

3) Policy/decision makers already have strong pre-conceived opinions on the issues and the strategies to be taken to alleviate the problem.

4) Research findings and reports are sometimes late and not timely as and when required by the policy/decision makers.

5) The research itself has flaws in respect of the various criteria of research requirements, e.g. the statement of objectives, methodology, and sampling.

Researchers must develop strategies that would help to influence decision makers to arrive at reforms formulation based on the best informations available. Researchers must also take an active role and encourage policy makers to make reliable decisions based on research findings. It is proposed that strategies be developed within three stages of research: input, process and output.

Input Stage

1. Educational Research Systems Development

a) To promote awareness and to enforce commitment of all the people concerned with the research, researchers must adopt an interactive approach throughout the research process up to the dissemination stage.

b) To avoid duplication of research, there must be a co-ordinating body to control, oversee and document research activities being undertaken.

c) It is preferable that official patronage or sponsorship by a recognized body or individuals be obtained to facilitate impact of the research findings.

2. Personnel

a) The researchers themselves should be skilled, qualified and knowledgeable in undertaking all types of educational research. Additionally, such research should be adequately advised by equally authoritative supervisors. These steps will ensure the integrity of the research. This will discourage decision makers from dismissing the results of research as having low standards.

b) When considering the research to be undertaken, the involvement of all relevant key personnel, for example, policy makers/politicians, is considered vital and should be encouraged. In addition, the involvement of the intended research audience could be considered, if appropriate.

3. Setting the Agenda of Research

a) To develop a systematic approach to research, an agenda of research itemizing and indicating topics or areas must be established. This will enable research priorities to be identified.

b) Establishing the timing of research projects according to the political climate. This can take the form of proactive approach to the research activity and anticipating the requirements of decision makers, or the problems expected to arise.

c) The research agenda should implicitly include guidelines which insist that the research is completed within a certain period of time, and the findings published and disseminated punctually.

4. Funding

Researchers must emphasize the importance of research to ensure adequate funding which would enable the research to be undertaken.

5. Utilization of Available Research Findings

To complement and assist the research project at hand, the results of related research already undertaken should be taken into consideration. This can be done from a review of the relevant research literature. This would add weight to the reliability, validity and accountability of the findings of the research.

Process Stage

1. Interactive Approach

Key personnel and, if appropriate, the intended research audience and participants should be involved or kept informed at all stages of the research process. The composition of this group may be altered at various stages of the research.

2. Rigours of Research

The research process must follow the established rigours and methodology. The objective of the research must be clear and a time-table established for the various stages of research. The appropriate/suitable methodology must be employed. The sampling technique adopted must be appropriate and able to reflect the overall aspects of the research problem as well as to ensure representativeness of the population. Meeting these requirements will contribute to the reliability and validity of the results. A methodological approach should also be adopted in the analysis of the data and information. Finally, the report should be precise and should include alternative recommendations. The need to write the report in a format and with the style of language easily understood by the decision-makers is also emphasized.

3. Punctuality

To be of value to the clients, the research report should be completed and submitted punctually according to the specified time-table.

Output Stage

1. Dissemination/Marketing of Research Findings

a) As part of the dissemination process, the target groups need to be identified. These are likely to include the policy/decision makers, politicians, educational practitioners at all levels and organizations such as professional associations. Other researchers showing interest in the research problem should also be informed of the research and invited to respond to the results. To reach a wider audience a summary of findings should also be made available to the public through the various mass-media.

b) Various formats of the report should be prepared, each tailored to suit the individual target group. For example, policy/decision makers should receive an executive summary of the results. Public relations and media personnel should receive a report written in lay terms. If applicable, a translation of the report or results into the language or dialect of the target groups should be made available.

c) To ensure the research outcomes reach as wide an audience as possible, a number of avenues for dissemination should be utilized. These include the presentation of the research findings at seminars and forums for interested parties and the target groups. Publishing report summaries in journals, pamphlets and newsletters can also be accessed to reach most educational practitioners. Another way of reaching this group may be through the production of video tapes. A wider audience can be reached by similarly accessing the newspapers and magazines as well as arranging interviews broadcast through other media such as TV and radio. Relating the outcomes of research on a person to person basis either formally or informally is a more direct approach which can be adopted.

2. The Executive Summary

To be more influential so that policy makers adopt the recommendation of the research, the executive summary should also indicate the policy implications. Presentation on the costing of the reform(s) being proposed would also create a greater impression. Policy/decision makers are often influenced by a number of different interest groups when arriving at a decision. To accommodate this, the decision makers can be presented with a set of alternatives of the actions deemed appropriate as described by the research problem.

3. Timing

a) The timing of presentation of the results to policy makers is crucial. For example, if a reassessment of a policy is being considered, information from research must reach the decision makers at the critical point of time to have impact, that is, the results are able to be used in the decision making process.

b) To maximize the impact of dissemination, the results of research should be released at the time of the year when they will not be overshadowed by other mitigating circumstances such as vacations which would dilute the impact.

Summary

Despite all of the intentions of the researchers and the stringent strategies adopted to influence decision makers, researchers must acknowledge that their recommendations may not be immediately taken up by decision makers.

5. Role of Educational Research for the Development of Education at Present and in the Future in Asia and the Pacific Region

Introduction

In this section, participants considered the role of educational research in terms of its potential for improving educational research and practice in the present and in the future in the Asia and the Pacific region.

Educational research can play three major roles, that is, (a) a 'leading' role, in which research leads decision making and policy, (b) a 'supporting' role, in which research contributes to existing policies and practices, and (c) a 'following' role, in which research follows policy changes (e.g. evaluation, monitoring). It was apparent from the country papers that in the areas of systems and macro policy, the politicians and bureaucrats lead and shape thinking and practices rather than educational researchers. There is thus a need to consider the proactive role that educational research could play.

What follows is suggested roles for educational research in the three major types of agencies currently undertaking educational research, viz. government, non-government and academic (universities and colleges). Within this structural distinction there are existing differentiated research orientations from policy-oriented (government and its agencies) to curiosity-based research (academic investigative research).

Role of Educational Research

1. Government Agencies

The major focus of such research needs to be policy-oriented. There is a role for researchers in trying to educate policy makers of the value of educational research, especially in relation to better policy/decision making. In more advanced countries it was seen as important to also influence politicians concerning the value of educational research (e.g. through public forums, seminars and more appropriate dissemination strategies). It was thought that unless educational research meets the needs of policy/decision makers they do not see it as useful or relevant. It is therefore important for educational researchers to take account of the needs and perspectives of policy makers. Educational research needs to be seen as more practical, relevant and accessible so that its usefulness is perceived by politicians and policy makers.

Specifically, the roles of educational research in the government and policy-oriented sector could be to:

a) Influence policy makers at the systems and operational levels;

b) Influence those involved at the programme implementation phase;

c) Supply information to assist decision making;

d) Provide specific policy advice/options;

e) Assist in future planning and forecasting;

f) Develop and evaluate educational programmes and policies (for example, curriculum development/assessment);

g) Research how to better resource educational research (for example, undertaking research on agencies which currently fund or could fund educational research).

2. Non-Government Agencies

These agencies range from those such as CIER and KEDI which are independent and autonomous but which work closely with government agencies and ministries with which they have formal and close links to ACER and NZCER which are less closely and directly associated with ministries of education. Such national agencies were perceived as having important roles to play in future initiatives in the Asia and the Pacific region. Specifically, the role of non-government agencies could be to:

a) Investigate the existing and possible linkages between and among the different research organizations in Asia and the Pacific;

b) Monitor and undertake critiques of systems/policies/programmes;

c) Serve as a national and regional information network and data bank to co-ordinate the information other organizations produce;

d) Initiate regional research programmes and, where appropriate, co-ordinate regional research programmes.

There could also be a role for an independent regional organization to take the lead in initiating research and various forums (e.g. such as NIER does).

3. Universities

The role of educational research in these institutions is to continue to undertake a range of basic and applied research in a spirit of free enquiry. Such investigative research has a continuing role to play in increasing our understanding of education as a field of study and our conceptual understanding in the contributing academic disciplines (e.g. educational psychology, history of education, sociology of education). Further, it can lead to an increased understanding of methodology.

In addition, new roles could be assumed to:

a) Undertake more comparative and integrated studies;

b) Pave the way for innovations, new knowledge and new methodologies;

c) Undertake more studies in the local context;

d) Take on an increased role in training new and future educational researchers.

Towards Regional Co-ordination and Co-operation

It was considered that a major role for educational research could be to assume a leadership role in the initiation and implementation of more co-ordinated and co-operative research programmes in the region. For example, the OECD has three to five year programmes to which member countries contribute. The time is opportune for an Asia-Pacific Programme of Research to be developed and co-ordinated in the interests of the educational and economic development of the region, for example, in relation to or in contrast to the new European Economic Community. Specifically, such a role could involve:

a) Investigating the linkage between basic and applied research in the region;

b) Examining linkages between government, non-government and tertiary institutions [this already exists in China (CIER), and the Republic of Korea (KEDI)];

c) Investigating the extent to which co-operation, communication and co-ordination could exist between government, non-government and tertiary institutions involved in educational research;

d) Developing inter-regional co-operation through sharing information on existing research programmes in the Asia and the Pacific region, through the office of a new cross-national organization.

Conclusion

It is evident that educational research has an important role to play in both policy-oriented and basic research. The benefits to educational policy and practice as well as to enhancement of understanding of education as a field of study are apparent. However, in a period of reduced funding for educational research, it is important to communicate the potential value of the enterprise for both educational and regional economic development to politicians, policy/decision makers and the community at large. Maximum impact is likely to occur if there is better co-ordination and co-operation among existing agencies and if a regional institute for educational research was established for the purposes of sharing existing knowledge and for initiating new directions for the future benefit of the region.

6. Recommendations

It was accepted during the Seminar that findings of educational research undertaken played key roles in the institutionalization of major educational reforms in countries of Asia and the Pacific. It was likewise acknowledged that educational reforms influenced the directions of educational research to a certain degree. It was however noted that policy/decision makers react differently to research-based information provided to them. Participants found difficulty in identifying the extent to which policy makers utilized research findings *vis-a-vis* decisions on educational issues and problems.

In view of this, the following recommendations were adopted by the Seminar participants:

1) In countries where there are no existing national research institutes, such institutes should be established, as experiences of countries in which they already exist have shown them to be effective in promoting, co-ordinating and strengthening the research activities of these countries;

2) In countries where there are various research institutions, there is a need for a national co-ordinating body to monitor and co-ordinate all the research activities in that country;

3) A Regional Research Centre be established to collect and disseminate information, conduct training, and monitor and co-ordinate research on a regional basis;

4) Seminars (national or regional where appropriate) be organized to look into the following:

   a) The value of research findings as a useful tool for decision-making;

   b) How researchers can influence policy makers to accept research findings as a decision-making tool;

   c) The extent to which research findings are utilized;

5) Individual countries be requested to conduct studies aimed at investigating the utilization of research findings. Such studies will highlight whether these have impact on decision makers or on the educational reforms taking place;

6) The government should encourage the private sector to contribute funding for educational research; and

7) International/national agencies should be requested to investigate avenues whereby researchers can gain experiences and training through an exchange scheme in Asia and the Pacific Region.

6. Recommendations

It was the consensus of the participants that the preceding recommendations will enhance the state of educational research in the Asia and Pacific Region in general and in their respective countries. The participants hope that these recommendations will merit the preferential attention of the policy/decision makers of the region to provide for a more co-operative and coordinated effort towards the improvement of education. The participants believe that positive actions on the recommendations will greatly benefit the present and future directions of the educational research.

Annex I: List of Participants

Participants

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Mr. Ryo Watanabe	Senior Researcher Section for International Co-operation in Education Department of International Education

Annex II: Country Reports

Australia

A. Major Institutions Engaged in Educational Research and Types of Research Undertaken

The major institutions involved in educational research are governmental or quasi-governmental. The types of research undertaken are diverse and relate, for the most part, to sources of funding. The government is the major source of research funding in Australian Education at all levels. This is achieved through national and state agencies which fund specific types of research, through various processes of application and submission (e.g., competitive, contractual, invitational). Non government-funded research is associated with professional associations and philanthropic trusts. The various schemes operating within major institutional structures are outlined below.

1. Government Research Funding

a) The Australian Research Council (ARC)

The Australian Research Council is Australia's "premier research funding body, with a major responsibility for research carried out in the higher education sector". It has two broad functions: to recommend to the Minister the distribution of research funds; and to provide advice to NBEET on research policy issues, including national research priorities, co-ordination or research policy, and research training and measures to improve interaction in research between the public and private sectors.

ARC provides grants to individuals and small teams usually within universities on the basis of excellence. It provides funding in the areas of educational psychology, educational sociology, education/social sciences, education/humanities, and various related fields in which educators work such as women's studies, social work and ethnic studies. "The ARC mission is to devise, develop and help to implement an effective national research system, especially in the higher education sector, which will make the greatest possible contribution to the social, cultural and economic well-being of Australia." (ARC, 1989:1)

The ARC also introduced a program of National Research Priorities, e.g., 'Cognitive Science' which includes intellectual and cognitive processes and 'Asian Studies'.

Of increasing importance are key Centres of Teaching and Research which involve research concentrations of high-level activity. e.g., the Key Centre for Aboriginal Studies and Education; the Key Centre for School Science and Maths (especially for women).

b) Government Contract Research

Many researchers in the field of education are able to obtain research funding through undertaking contract research for government agencies. Contract funding is a major source of research funding in Australia. Contracts are obtained in various ways through tendering or invitations to undertake specific projects. Agencies offering such contracts range from State and Federal Departments of Education, The Department of Employment, Education and Training (e.g., the Evaluations and Investigations Program), The Office of the Bureau of the Status of Women, UNESCO, OECD, Government Departments concerned with the interface of education and various social policy areas (e.g., family studies, social justice, employment, training). Examples include:

(1) *The Department of Employment, Education and Training's Evaluations and Investigations Program*, research funded for investigations and reviews of relevance to the government's current policies in higher education, "to obtain information that will assist in future decision-making by the Department, State authorities and institutions; and to encourage and develop institutions' capacities for evaluation of higher education activities and assessment of performance" (DEET(a), 1989:2). Examples include: higher education-industry interface; links with TAFE (Technical and Further Education); institutional management; and distance education.

(2) *Projects of National Significance*, e.g., is Education of Girls: Broadening Girls' Post-School Options. Such projects can be conducted by individuals, education research units, or state education authorities.

(3) *Grants for Innovative and Curriculum Projects*: Various grants can be obtained by a person, body or institution or a State for the purpose of carrying out an innovative or curriculum project approved by the National Board of Employment, Education and Training.

(4) *Higher Education Equity Program*, to trial projects designed to increase participation in higher education, e.g., grants to support innovative action-oriented pilot initiatives to increase participation by disadvantaged groups.

(5) *The National Priority (Reserve) Fund*, to "draw upon for one-off projects designed to achieve specific objectives in areas of national priority, e.g., multicultural curriculum development and cross-cultural awareness. (EET Act, 1988; appendix B, 66).

(6) *Women's Research and Employment Initiatives Program (WREIP)*, to "sponsor research relevant to policy development for women's employment and training; provide information concerning women in the labour force, training and education; and sponsor innovative programs intended to facilitate women's access to and participation in employment and training". (DEET (b),1989;99)

c) System-wide Research Funding

A pattern of state government research units in education existed in Australia, e.g., Curriculum Research and Development Units to undertake system-wide research. These have progressively been disestablished and replaced with a variety of policy and planning research divisions, which undertake research themselves or offer contracts. Most such units are involved in monitoring performance and in system-wide evaluation. They obtain significant funding from commonwealth sources. Examples include the South Australian Education Review Unit (system-wide monitoring); the New South Wales Division of Management Information Services (statistical information collection and evaluation of programs); Victorian Schools Program Branch (with functions part-way between R & D); the Tasmanian Evaluation and Research Section (involved mainly in evaluation). Within such branches or units, there has been a changing definition of what counts as research (as distinct from policy, planning, monitoring and evaluation, curriculum R & D). However, within such system-wide units, some other research is still being undertaken. For example, in Tasmania: (1) use of school clusters in curriculum development; (2) language teaching in schools; (3) new approaches to maths teaching; and (4) action research projects in new schools.

d) The Australian Education Council (AEC)

The Australian Education Council comprises a Council of State, Territory, and Commonwealth Education Ministers. It "exercises considerable influence on the development of educational policy in Australia as it is the only educational organization whose membership represents the constitutional authorities responsible for policy making in the field of education and whose concern extends to all aspects of education" (AEC Annual Report 1988/9:2). The specific research briefs relate to Working Parties set up the Council e.g. to consider establishing a foundation for gifted and talented children; to consider a national style in spelling and punctuation; to consider links between schools and TAFE (Technical and Further Education); or to inviting commissioned research e.g. on the history of the Council from 1936-86.

2. Non-Government Funding Structures

There are various independent research organizations and institutions which fund educational research in Australia.

a) The Australian Council for Education Research (ACER)

The Australian Council for Educational Research (ACER) is an independent, national organization. Its major purposes, as stated formally in the Memorandum of Association, are: (1) to promote the cause of research and development in education in Australia; (2) to conduct research and undertake development in any matters affecting education both through its own staff and in cooperation and collaboration with other bodies or organizations in Australia and overseas; (3) to publish and disseminate and to assist financially or otherwise in the publication and dissemination of the results of any such research or development or any other research or development which in the opinion of the Council requires such action; and (4) to foster the train-

ing of research and development workers in education.

Its current sources of funding are a combination of annual grants from the Commonwealth, State and Northern Territory governments (approximately 33%) and income generated through research contracts, the provision of professional services, and the sale of tests and other materials (67%).

ACER conducts a research and development program designed to have an impact on educational policy and practice. Its research program is organized on a triennial basis and involves a wide process of consultation with commonwealth, state, and various research organizations and associations. Much of the research effort bears directly on the policy questions of concern in the Departments and Ministries of Education. Other aspects of the research program relate directly to classroom and other educational practices. Only a small component of the program is concerned with basic research.

The current research and development project themes are:

> *Theme 1: The Compulsory Years - the Common Experience*, e.g. Continuity and change in Compulsory Schooling (e.g. redefining the curriculum; the social and political context of schooling; decision making in schools); and Core Learning and Competence (e.g. reconceptualising the basics; new directions in assessment and evaluation).
>
> *Theme 2: Beyond Compulsory Schooling*, e.g. Senior Secondary Schooling (e.g. curriculum and organization; assessment and certification; school influences on retention); Post-secondary Education (e.g. selection for higher education; transitions between education and the labour market; youth in transition; vocational interests, aspiration, and choices).
>
> *Theme 3: Cognitive Processes and Education*: This them is concerned with research and developments likely to inform teachers and learners about thinking, problem solving and learning.
>
> *Theme 4: Education and Technology*: e.g. the social impact of technology and the implications of technological change for education, and technology as an aid to learning and teaching. (ACER, 1987-88:15).
>
> *Theme 5: Teachers in Australian Society*: e.g. context of teaching, teacher education and teachers' work. Specific projects involve the structure of the teaching force and teachers' careers; teacher education and school improvement; teachers' craft knowledge, epistemological base and appraisal.

b) Professional Associations

Professional associations sometimes provide small research grants to assist their members to carry out modest research projects, e.g.:

(1) *AARE (Australian Association for Research in Education)*: AARE has a doctoral thesis award for outstanding doctoral research in education, the high quality contribution made to educational knowledge by graduate students. (AAER. 1989:1)

(2) *The Australian College of Education (ACE)*, which established a Committee on Research Activity in Education (CRAE) to "give direction to and to provide oversight for the College's interests in educational research activity." Specifically, the Terms of Reference include responsibility for: maintaining an overview of the state of educational research in Australia and, where possible, overseas; fostering a climate of support for research in education and its appropriate implementation; recommending the initiation of research activities including those which have a direct application to teaching; promoting the dissemination of research findings relevant to the interest of College members; assisting in identifying policy issues in Australian education which require research; assisting and advising in research projects conducted by members of the College; making recommendations for grants for research activities to the Finance Committee of the Council of the College. (Council Minutes (C77/6.06a)

Recent studies funded by the Research and Projects Committee have included studies of teachers and better schools, reporting of school assessments, education and bureaucracy and the re-structuring of state education departments.

c) Philanthropic Trusts

Researchers in education in Australia can also obtain funding from various philanthropic trusts. A philanthropic foundation is: "a non-governmental, non-profit organization having a principal fund of its own, managed by its own trustees or directors, and established to maintain or aid social, educational charitable, religious or other activities serving the common welfare". (ACER, 1987:v)

Unlike Federal or State Governments, philanthropic trusts cannot fund a full range of research activities, cannot offer continuing long-term support, and have more modest levels of budgeting. HOwever, they play a valuable role in funding small scale research and in providing seeding money for researchers to pilot more large-scale programs, e.g. the Collier Charitable Fund which supports "public educational purposes in Commonwealth of Australia".

B. Major Educational Reform Actions Being Undertaken and Contributions of Educational Research

The major educational reform actions undertaken in Australia relate to 'restructuring'. This has occurred as a result of the formation of a new Ministry of Employment, Education & Training. The most important reforms are outlined within four analytic structural divisions: (a) The Schools Sector; (b) The Higher Education Sector; (c) The Employment and Skills Formation Sector; and (d) The Research Sector.

These analytic divisions reflect the new roles, structures and functions of the National Board and Councils of Education in Australia. The National Board of Employment, Education and Training was established on 1 July 1988, under the Employment, Education and Training Act 1988. There is also a

Women's Employment, Education and Training Advisory Group (WEETAG) which has been formed: "to ensure that women's issues relating to employment, education and training are given appropriate consideration". (NBEET Handbook, 1989:2). While the content of the reforms described below reflects the new advisory Council structures (Schools Council, Higher Education Council (HEC), Employment & Skills Formation Council, and the Australian Research Council (ARC), the content of the reforms is not necessarily the consequence of the restructuring. Some reforms such as those within the HEC and ARC have been very largely politically driven and the contribution of research to those reforms has yet to be assessed. In the Schools Sector, however, many of the reforms have been set in train by a combination of factors, e.g., political will, the influence and advocacy of key proponents of educational philosophies, the 'percolator' effect of educational research becoming part of bureaucratic knowledge and discourse and then becoming part of the policy formation process.

Questions relating to the impact and role of educational research in the new reforms have only recently begun to be asked by Australian educational researchers. Anderson (1985), questioned why there was so little apparent use of social science knowledge in Australia by policy-makers. He alludes to two views; one, that research can play a vital role in helping develop strategies to meet current and future problems (i.e., facilitate reform actions); the other, that 'education cannot compensate for society' and that educational reform actions cannot be socially, economically or culturally transformative.

Reasons why research has not had much of an impact relate to perceived usefulness; whether the research challenges conventional wisdom or legitimizes the perspectives of the bureaucracy or interested parties. Research ideas, he argues, produce tensions in a bureaucracy because they have the potential for disrupting the status quo (the 'political' model of R & D). Probably the greatest impact of research is through what he calls the 'cultural diffusion' model in which research is influential through its facts, concepts, methods and theories which percolate from the research domain into the wider intellectual culture, and eventually become part of the discourse of policy advisers, or part of the procedures by which a reform action is implemented. No systematic assessment of the role of research in the new reform actions in Australia is attempted, given that the reforms are too recent and that the scholarly analysis of the reforms is in process.

Reforms taking place in the secondary and tertiary education sectors in Australia are part in *international phenomenon* and have their parallels in most western countries, where relationships between government and educational institutions are changing dramatically. The impetus for change has come from a complex of economic, political and social pressures which include: (1) prevalence of a philosophy of 'economic rationalism'; (2) worsening economic conditions and an admonition to institutions of higher education (and, to a lesser extend, schools) to play their part in economic recovery; (3) pressures on governments to reduce public sector spending; and (4) social pressures towards greater access and participation.

The changes taking place in all sectors of Australian education have not occurred in a socio-historical vacuum, but are part of a long term shift politically in Australia towards 'the right' and intellectually away from

'liberal' education towards increased 'vocationalism'. Specific changes are "intended to reform government to enable them to contribute more directly to economic growth and the restructuring of the economy, and to increase ministerial control and to centralise decision making... The merger of the education and employment portfolios was intended to bring the education system more closely into accord with the needs of industry." (Davies, 1989:179)

a) Schools Sector

"These changes, largely influenced by the effort to promote national reconstruction following the earlier economic downturn, have resulted in many positive gains for education. There has been a significant move to develop a national approach to the goals of schooling, and valuable collaborative curriculum development between the various school systems has occurred. The school system have also collaborated on development of a national approach to assessing student achievement and school performance and are examining ways of minimizing difficulties encountered by students when they move interstate". (AEC 1989:1) The Commonwealth Schools Program has five current emphases: (1) participation, retention and general competence; (2) disadvantaged schools and students; (3) language and multicultural studies; (4) teaching and curriculum development; and (5) overseas students. There are some opportunities for research within what are largely program delivery services. (1989-90 Programs: DEET, 1989)

Research that is currently being sponsored by the Schools Council includes: (1) a survey to establish a profile of the Australian Teaching Force; (2) student outcomes and program effectiveness in the disadvantaged schools program; (3) retention/disadvantaged schools program - analysis of issues and indicators of disadvantage; (4) teachers' professional craft knowledge: indication and development.

The major content of the reforms in the school sector have been in the areas listed below. The reforms include:

(1) the content and focus of the curriculum; the establishment of national curriculum goals; the place of maths, science and technology in the curriculum; the post compulsory and the core curriculum. (This area of reform has been influenced by a range of educational research - national and international - from such disparate field as the sociology of the curriculum to policy studies on school retention).

(2) restructuring of state-wide systems (e.g., devolution in Victoria) in terms of locus of power (e.g., centralised vs decentralised). (The international literature on school-based decision making and devolution had some impact on current reforms.)

(3) a national approach to assessing student achievement, school performance and the possibility of a common form of student portfolio. (This reform has been influenced by political and ideological factors allied to particular educational technologies for assessing achievement and discourse associated with social transformation or the maintenance of the status quo).

(4) structural arrangements being reviewed, e.g., senior high schools and colleges being developed to solve a range of retention, curriculum and organizational aspects of schooling. (Research was influential in highlighting the potential value of senior high schools and helped lead and create a climate of support).

(5) state-wide changes in assessment for school leavers, e.g., the Victorian Certificate of Education with its common assessments tasks which reflect students' abilities to complete a range of higher order skills. (These reforms were influenced by educational thinkers whose views were closely attuned to the educational philosophy of the ruling political party).

(6) a new concern with school effectiveness and, as part of that movement, the professional development of principals, especially in relation to leadership. (Educational research - national and international - played a part in this reform, e.g. OECD position papers and monographs. However, there are strong political processes relating to accountability associated with this reform).

(7) a new emphasis on education and industry links, through technical and further education (TAFE) and their links to the school sector. (This reform is mainly economically and politically driven, although it is also related to educational issues such as retention, curriculum organization, and credit transfer).

(8) the better preparation and professional development of teachers and access to new career and pay structures. (This reform has been influenced by a series of research-based reviews on teacher education and teachers' work, but there are associated factors relating to recruitment and retention of teachers).

(9) making schooling more relevant to contemporary circumstances and to Australia's Asian-Pacific location. (This emphasis is partly the result of social and cultural analyses, as well as political economics).

b) The Higher Education Sector: The New Unified National System

A major reform has been to dismantle in 1987 the 'binary' system of higher education in Australia, established as a result of the Martin Report (1964/65) - a system which included two distinct and differentiated sectors - universities with a greater emphasis on academic as distinct from vocational studies, and a greater involvement in higher degree teaching and research; and colleges of advanced education, specializing in undergraduate teaching with a vocational focus. (Report of the Task Force on Amalgamations in Higher Education, RTFAHE 1989:1)

One of the most significant consequences of the Unified National System will be in relation to the role of research. The 'benefits' claimed are: (1) an expansion and improvement in the standard of facilities for teaching and research; (2) concentration of research and development effort with more efficient use of expensive facilities and a stronger basis for securing both public and private funds; and (3) a more competitive basis for attracting

overseas students and visiting staff created by enhancing the educational profile and public image of the combined institution. (RTFAHE, 1989:7)

The role that research played in these reform actions was minimal. There were analytic critiques on the inadequacies of the 'binary system', reviews and evaluations of the system (including the research sector). On the whole, however, these reforms have been politically driven within a framework of national and international economic instrumentalism.

c) Skills Formation and Employment

There are opportunities for educational researchers to undertake research in this sector, but to date most activity by educational researchers has been in the other three sectors. However, under the Innovative Grants program of NBEET, seed funding has been used to stimulate innovation in curriculum in the areas of training, skill formation and employment. For example, current research is to assist labour market and training reform action through research into 'skill auditing' (e.g. to document the state of the art and the merit of skill auditing); 'training strategies' (e.g. in training and industrial areas). Educational reform actions in this sector are aimed at stimulating and encouraging skill formation training through R & D and through new ideas, products and processes. In particular, the aim is for enhanced training in the Technical and Further Education sector (TAFE) and in their interface with industry. The formation of skills needed in innovating a product design are the goal, together with new ways of linking education and training, and industry R & D.

d) The Research Sector

The reforms in the research sector of higher education have been impelled by the need to make individual university researchers more responsive to economic and social needs. There has been a new emphasis on 'selectivity and concentration', on establishing research 'priorities'. The Government sees research as "a continuum extending from the curiosity-driven to the market-driven" (Research for Australia, 1989:3), but welcomes 'a growing tendency for higher education institutions to establish concentrations of research effort in the form of centres focusing on a range of interrelated problems involving researchers from many disciplines'; and the "organization of research on a theme or area basis, since it encourages the concentration of research effort in a defined sphere of concern without confining individual researchers to a narrow problem-based approach. It leads to the cross-fertilisation of ideas and technologies". (Research for Australia, 1989:4) An increased emphasis has been placed on "collaboration between industry and higher education in research", e.g., joint research projects, consultancies, sharing facilities.

The role of research within the current reforms in this sector have not been inconsiderable but have again been secondary to political processes. Research Reports such as those produced by ASTEC (1985) and (1987) were important documents in foreshadowing reforms in research funding and concentration. Evaluative research was important in the discourse of effectiveness and efficiency and in formulating criteria for research performance in-

dicators (institutional and industrial). Such evaluative research will continue to be important for monitoring educational reforms and outcomes and is more closely linked to policy.

Summary

There have been major educational reforms taking place in Australia at the system level (state and national) and at the institutional level (schools, colleges, university sectors). While some of the reforms have been influenced by educational researchers (e.g. in curriculum), most have been driven by political processes associated with power, control and accountability, but driven by national economic imperatives. The technology of research has been an important tool in policy discourse and procedures (e.g. implementation, evaluation, monitoring). However, much scholarly work still needs to be done on mapping the shift from socially transformative discourse (associated with access, participation, and social justice) to those of economic instrumentalism (associated with monitoring, performance, productivity and increased control).

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Brunei Darussalam

1. *Introduction*

Brunei Darussalam is situated on the North-West end of the island of Borneo and has a total area of 5,769 square kilometres. It is divided into four districts - Brunei/Muara, Tutong, Belait and Temburong. The country's population is around 227,000 people, with the Malays around 155,000, the Chinese 41,000 and other indigenous people of about 11,500.

2. *Education System*

Education is provided free for children from the age of five years. Primary education takes seven years including one year at pre-school level. From pre-school level to Primary Three, the medium of instruction for all subjects is the Malay Language, except for English Language subject which is taught as a subject. From Primary Four upwards the children follow bilingual system where two media of instruction are used. Malay Language is used for teaching the Malay Language, Islamic Religious Knowledge, Physical Education, Arts and Crafts, and Civic. English Language is used for teaching subjects such as English Language, Science, Mathematics, Geography and History. At the end of Primary Six, the pupils sit for the Primary Certificate of Education Examination. On passing, they will be admitted into the secondary level of education; otherwise they will have to repeat for another year at the Primary Six level.

Secondary education takes either five or six years. The Lower Secondary Level is from Lower Secondary One to Lower Secondary Three at the end of which, the students will sit for a public examination, the Brunei Junior Certificate of Education. If they pass with Grade 1 and Grade 2, they will continue for two more years at the Upper Secondary level, at the end of which they sit for the General Certificate of Education Examination at Ordinary Level(GCE 'O' level). On the other hand, those who pass the Brunei Junior Certificate of Education with Grade 3 will follow a three year course before sitting for the GCE 'O' level. However, students in the three-year stream who perform very well may be promoted to the two-year stream. Similarly, students in the two-year stream who perform very badly will be channelled to the three-year stream.

Pre-University education or Sixth Form takes two years. At the end of the two year course, students will take GCE 'A' level Examination, which is the final public examination in the school system. Those who pass with adequate advanced level results can proceed to higher education at Institutes of higher education or University level either locally or abroad.

Brunei Darussalam's education system has been extended since 1985 with the establishment of the country's own University - The University of Brunei Darussalam. This has provided wider opportunities for citizens to pursue university education locally.

The Ministry of Education supervises 116 primary and 17 secondary schools throughout the country. There are four vocational/technical colleges and two more vocational schools will be established in 1991. Besides the University of Brunei Darussalam another higher institution of learning is the Institute of Technology Brunei (ITB) which is mainly geared to train senior level technical graduates. The Ministry also supervises non-government schools in terms of their curriculum and public examinations.

3. *Institutions Engaged in Educational Research and Types of Research Undertaken*

a) Ministry of Education

The main department under the Ministry of Education which is given the task to undertake educational research is the Department of Planning, Research and Development. However, the Department of Curriculum Development, also undertakes research and evaluation on programmes of education aimed at qualitative improvements at the school level.

1) Research Unit, Department of Research, Planning and Development

The Research Unit of the Department of Research, planning and Development is the main agency within the Ministry of Education entrusted to carry out research on educational matters. To catty out this function, it undertakes research projects into issues and problems it has identified. In this respect, it concentrates on issues which pertain to policy considerations and decisions.

The nature and types of research that this Unit undertakes would depend mostly on problems perceived or being identified by the policy makers at the Ministry of Education. The Unit does its research based on directives by the decision makers as well as on its own initiative.

Most of research activities conducted concerned issues related to improvements and enhancements of the educational system in general. These activities include areas related to the curriculum, students and school, supply and administration of teachers, planning and construction of school buildings and facilities, and also topics connected with the use of technology of education in the teaching-learning environment of the school.

A research activity conducted was to trace the relationship of the performance of students who have passed the Brunei Junior Certificate of Education (BJCE) with Grades I to III for the years 1980 - 1983 with their performance in examination at the GCE 'O' level and the GCE 'A' level. The findings showed that almost all students with Grade III, and the majority of students with Grade II qualification at BJCE could not obtain anything more than three GCE 'O' level passes. Subsequently, only a few could proceed and reach the GCE 'A' level.

The Ministry of Education has decided in 1988 to stream students at the Form Four level (i.e., those students at the BJCE) into two streams:

(1) a two-year course stream for those who obtained Grades I and II at BJCE.

(2) a three-year course stream for those who have obtained only a Grade II at BJCE.

At the end of each stream period, students would be eligible to sit for the GCE 'O' level examination.

Another short survey done was on students who have failed twice in the BJCE examination for the years 1983-1988 according to age and gender. The purpose of this research was to help the Technical Section, Department of Schools to plan for the two vocational schools scheduled for completion in 1991. It is the policy of the Ministry of Education that if a student fails his BJCE examination, he would be allowed to repeat for another year; but if he fails for the second year, he has to leave school. With the establishment of the two new vocational schools, these students will automatically be channeled to one of these schools where they can learn various vocational courses that will equip them with workplace skills and ease them in finding jobs when they leave school. Form three students who are interested can also be enrolled in either of the vocational schools.

Research has also been done for the purpose of planning one session school for all primary and secondary schools throughout the country. For the year 2000, according to the research findings, 13 primary and 9 secondary schools will be required to be built to fulfil this plan.

Recently, a committee has been formed to look at the educational requirement of the handicapped children in Brunei Darussalam. They are two ministries which take care of the welfare and education of the handicapped. These are the Ministry of Culture, Youth and Sports, and the Ministry of Health. The Ministry of Education is playing a small role as far as the handicapped children are concerned. Recently, the thinking among the Ministry of Education officials is that the Ministry must now play a much bigger role for the education of the handicapped. A committee has therefore been given the task, to look at and the study the educational requirements of the handicapped children.

2) Department of Curriculum Development

The Curriculum Development Department's research activities are mainly concentrated on specific problems and issues pertaining to the school curriculum and its implementation. Several research have been done on the curriculum for the primary and secondary education for the purpose of improving and upgrading education at these levels. The studies are also aimed to ensure continuity of the syllabus contents from the primary to the secondary level. As a whole, it can be summarized that the activities of research of this Department are tailored for the development of the policy on the curriculum and its contents. They are also to provide guidelines for the implementation of the curriculum particularly as and when they are translated into practice by teachers in the classroom.

b) Universiti Brunei Darussalam

Universiti Brunei Darussalam (UBD) was established only four years ago in 1985. Educational research at the University is mostly done by the faculty members who conducted their research projects in pursuance of their professional or academic interests. Most of the educational researches undertaken by UBD are mostly basic and/or applied research.

Some of the current research interests and projects in the UBD are as follows:

(1) Islamic Education in Brunei Darussalam
(2) a) UBD English Language Entry Test
    b) Correlation of UBD English Language Entry Test with UBD Examination Performance
(3) Macro Skill Video Developing Teaching Skills for Brunei Darussalam
(4) Student Learning in Context
(5) Learning and Thinking Patterns of Selected UBD Students
(6) UBD Student's Perception of Their Common Learning and Adjustment Problems
(7) a) Professional Orientation/Perceived Inadequacies and Attitudes towards Science Teaching of Primary and Secondary Brunei Teachers
    b) Variables Affecting Science and Maths Achievement of Primary and Secondary Students
(8) Student Attitudes to Science in Lower Secondary Schools
(9) Secondary Science Education in Brunei
(10) Developing Mathematics Problem Solving Abilities in Children
(11) Problems and difficulties in Teaching and Learning Mathematics in School (Primary and Secondary)
(12) Performance of Selected Bruneian Children in Some Guided Discovery Activities
(13) Acquisition of Science Skills among Upper Secondary Physics Students in Brunei Darussalam
(14) The qualities of a Good Teacher - A Cross-cultural Study
(15) Access to Education on Brunei Darussalam: Factors Influencing Policy in a Small State.

4. *Reform Action and Contribution of Educational Research*

Reforms have taken place based on the recommendations made by the report of the Brunei Education Commission of 1972. Among these reforms was the strengthening of the structure and organization of the Department of Education. Since then, the Department of Education has expanded. When Brunei Darussalam became independent in 1984, further reform was made with the Department of Education being upgraded to the Ministry of Education. Ministry of Education now has 6 departments namely: Department of Planning, Research and Development, Department of Schools, Department of Curriculum Development, Department of Inspectorate, Department of Administration and Services, and the Department of Examination. Each of these departments now has its own respective tasks, functions and responsibilities to perform which has resulted in improved productivity of the Ministry as a whole.

Another reform was the implementation of the bilingual system in all government schools in 1985. Under the system school children starting at Pre-School until Primary Three use Malay Language as a medium of learning. From Primary Four and onwards, two media of instruction are used: Malay Language for the instruction of Religious Knowledge, Physical Education, Arts and Crafts, and Civics, whereas English Language is used for the teaching of subjects such as English Language, Science, Mathematics, Geography and History. With the implementation of the bilingual system, the sovereignty of the Malay Language as the official Language of Brunei Darussalam is endorsed, while at the same time recognizing the importance of the English Language as the medium of instruction in higher educational institutions, both in the country and abroad. The system also aspires that a high degree of proficiency in both languages could be achieved by students.

With the implementation of bilingualism, students are no longer channelled into two streams, i.e. English Medium and Malay medium streams. The new system of education thus give students equal opportunities to go for higher education and in getting wider choice of employment.

Findings from the research on pupils' achievement have shown that pupils scored low in Mathematics compared to their performance in other subjects except English Language. Another finding of the study showed that the majority of teachers teaching Mathematics at the Lower Primary level had academic background in Mathematics only up to the level of the Brunei Junior Certificate of Education Examination (From 3). There were only very few who have obtained passes in the subject up to either the Ordinary or Advanced Levels.

Consequently, the Ministry of Education has provided various training programmes, in-service courses and workshops to boost these teachers' proficiency in Mathematics, with the cooperation of UBD. The in-service programmes are also aimed at upgrading and improving the teachers' skills and knowledge in teaching Mathematics. Thus, now there are better qualified teachers and even university graduates being deployed in primary schools to improve the performance of pupils in Mathematics.

Another research done was students' achievement on Mathematics syllabus D for the GCE 'O' level students. The findings revealed that quite a number of students who took syllabus D failed, meaning that not everybody can pursue that particular syllabus. Consequently, the Ministry of Education and the Cambridge Examination Syndicate approved and endorsed an alternative, i.e., Mathematics syllabus E, which caters for non-Mathematically mineded students. The syllabus contents are useful for daily use and the quality is not much different from 'O' level standard. All secondary students must now take either Mathematics syllabus D or E.

To improve the quality of education and teachers, a large number of teaching staff including headmasters, principals and deputy principals have been sent for advanced training at home and abroad regularly. This action although may not have been the result of research, is based on the belief that improvements of educational programmes can only be realized with comprehensive training at all levels.

Based on research and contents evaluation, curriculum materials such

as syllabuses, teacher's guides, textbooks and teaching aids are prepared. The Ministry through the Department of Curriculum Development is now in the process of arranging for the publication of more and new textbooks with local contents. Preparation of textbooks for various subjects are now in progress.

The Reading and Language Acquisition Project (RELA) is directed to encourage children to become independent readers. The objective of the project is to improve the teaching and learning of the English Language at the primary level through reading. The project is being done in stages for all primary schools in the country. This reform effort is also the result of research.

5. Summary

Educational research in Brunei Darussalam is not as sophisticated as those in developed countries. There is a lack of well-qualified researchers to conduct research and the logistical support is also quite insufficient at the present stage. A lot more still needs to be done to uplift the integrity of educational research in the country. This is particularly more relevant if and when educational research is to be viewed as a change agent or catalyst to policy decisions and formulations.

China

Introduction

Since the founding of the people's Republic of China in 1949, the educational research undertaking in this country has undergone 40 years of development and a relatively complete research system has gradually taken shape. Presently, in addition to the established state-level research organizations, other research institutions have been set up in every province, autonomous regions, municipalities and some other key cities. There are more than 400 educational research offices affiliated to institutions of higher learning. In addition, many central ministries outside the State Education Commission (SEDC) have also set up their own organizations for educational research. Statistics show that approximately 1,500 research workers who are professionally involved in both central and local research institutions within the SEDC and another 1,500 serve as research workers in the higher-learning institutions, not to mention the large number of people who are invited as part-time research staff in these tertiary institutions. Furthermore, some 120,000 full time staff undertake teaching-oriented research activities in educational colleges and teaching research offices attached to local educational administration.

The educational research institutions in China can be classified in terms of administration and function. The first type of research institutions are established inside government organizations. They conduct studies on the important and realistic issues involving educational development and reform to provide the government with research-based information in aid to policy development. The second type of research institutions are government administered yet relatively enjoy independence. These research institutions conduct researches pertaining to basic educational theory and teaching operations as well as on the strength of theoretical and micro-level research action.

Major State-Level Research Institutions of Education

1. The Department of Policy-Making and Legislation (PMLD)

The PMLD, formerly known as the Policy Research Office (PRO), is now a comprehensive research organization with some administrative functions inside SEDC. It has the following duties and functions:

a) To be entrusted by chairman and vice-chairman of SEDC to undertake research work and consultative service on educational policy-making;

b) To conduct comprehensive research on short-time and middle-term guiding principles and policies concerning educational development and reform within the country;

c) to draft the programme of educational system reform for the state and assist organizations tasked to conduct experiments with reforms; and

d) To sponsor the drafting of important educational laws and administrative legislations, and coordinate the legal work at SEDC.

The PMLD, with only 35 staff members, is composed of the following 6 branch divisions:

Division of Comprehensive Research; Division of Basic Education; Vocational/Technical Education; Division of Higher Education; First Division of Legislation; Second Division of Legislation; and Office of General Affairs.

2. The National Research Center For Educational Development (NCEDR)

The NCEDR, formerly the National Center for Educational Development and Policy Research (NCEDPR), is a research and consulting institution for SEDC on macro work of education. Its main duties are as follows :

a) To conduct research on long-term strategy for state educational development in terms of size, structure and system, and make recommendations to SEDC;

b) To conduct research on the theory and guiding ideology regarding educational development and reform;

c) To conduct research work with emphasis on the study and experimentation in education from primary to post-college continuing education in preparation for the arrival the 21st century; and

d) To conduct research on the experiences and trends in international development and reform in education, and engage in international academic exchange and cooperation in research on developmental strategies for education.

The NCEDR has following offices:

Research Office of Educational Philosophy; Research Office of Developmental Strategy for Education; Research Office of the Reform of the Education System; Research Office of Future Education; Research Office of Foreign Education; and Editing Office of the Journal Research Trends.

3. The Central Institute of Educational Research (CIER)

The CIER is a national educational research institute under the direct supervision of SEDC while getting direction on professional matters from the Chinese Academy of Social Sciences. The mission of the CIER includes following aspects:

a) To conduct research on basic theory of education, pedagogy, and philosophy, economics, and sociology of education, with the aim of providing theoretical bases for the solution of practical problems in the development of China's education;

b) To conduct research on instructional psychology and teaching

methodology, which is oriented towards primary and secondary schools;

c) To conduct research on histories of education in China and in other countries, with focus on studies of education in modern and contemporary China;

d) To collect, process and disseminate information on education at home and abroad, and provide information to educational administrative agencies at higher levels for use in policy making and guidance of educational work, and offer data services for research institutions and individuals; and

e) To edit and publish theoretical periodicals for educational research work as well as academic books and state-level documents on education.

Currently, the CIER has the following offices:

Research Office of Educational Theory; Research Office of Educational Psychology; Research Office of Teaching Methodology; Research Office of History of Education; Research Office of Comparative Education; Research Office of Educational Administration; Research Office of Higher Education; Research Office of Vocational/Technical Education; Research Office of Adult Education; Research Office of Early Childhood Education; Research Office of Educational Technology; Office of Educational Information; The Education Sciences Press; The Editorial Board of Educational Research; The Educational Technology Service; and The Education Library of China.

4. The Educational Research Group of State Council (SCGER)

The SCGER is a provisional research organization on educational policy-making. It was founded by the State Council in 1988, and gives priority to studying the major guiding principles and policies regarding nation-wide educational development and reform in the next decade, with a task of drafting the official document "The outlines on China's Educational Development and Reform from 1990 to 2000" for the State Council. The group headed by state councilor, is composed of responsible people from SEDC and the ministries of planning, finance, and labour and personal affairs.

5. The National Leading Group for Educational Research Planning (NLGERP)

The NLGERP is a permanent organization affiliated to SEDC for guidance and coordination of the research work in education. Among its major tasks are:

a) To formulate the national middle-term and long-term plans for educational research work;

b) To designate state-level key projects in the field of educational research;

c) To assume responsibility for processing application forms, evaluations and examinations of various planned projects in educational research

activities; and

d) To assist in analyzing, rewarding and disseminating the research outcomes of education.

A branch team of disciplinary planning under NLGERP consists of 90 experts and scholars in the educational sphere within the country.

Major Educational Reform Actions over the Past Decade

Since 1978 , the education cause in China has been taking the road of development based on reform. During this period, the most significant innovative action which had been undertaken in China's educational reform was to readjust and perfect the national educational system and structure.

1. In the administration of basic education, the responsibility for the development of basic education is entrusted to local authorities and the system of running and administering schools at different levels by local sector has been introduced. Except for major policies and principles as well as macro plans that are to be determined by the central authorities, all other responsibilities and power are delegated to local authorities such as the drawing up and implementation of specific policies, rules and regulations, and plans as well as the guiding, administering and monitoring of the work of schools.

2. The state and its departments in charge of education have readjusted and strengthened overall guidance and control of higher education. A system of running schools in multi-channel and multi-layer forms has been put into practice by which SEDC is in charge of overall plans and managements for higher education, colleges and universities are run by the three levels of the central authorities, the provinces (and the autonomous regions and centrally-administered municipalities) and the key cities. The administrative power of local authorities for institutions of higher learning is properly extended within their own jurisdiction.

3. Decision-making power has been strengthened for institutions of higher learning in running schools. So long as state policies and decrees are executed and state plans carried out, institutions of higher learning have the power to accept commissions for training students and enrol self-supporting students outside state plans; to redefine the goals of different specialities, draw up teaching plans syllabuses, compile and select teaching materials; accept commissions from, or cooperate with, other units in scientific research and technological development and in forming associations for teaching, scientific research and production; appoint or remove vice-president and other cadres at various levels; decide how to use the funds allocated by the state for capital construction and other purposes; use the funds they collected for educational and academic exchange with other countries; and so on. All the above-mentioned innovative measures adopted in the institutions of higher learning have, to some extent, strengthened their vitality in running schools.

In order to accumulate experience with respect to reforming the management system in institutions of higher learning, 132 colleges and

universities which make up 12% of the total institutions of higher learning in China have been designated as pilot units to conduct experiments with the president-responsibility system since 1985.

4. The systems of student enrollment, job-assignment and grant- in-aid have undergone reform in the institutions of higher learning. The previous system of unified enrollment for college and university of all the students in accordance with state plan has been transformed into following three methods:

a) Enrollment according to state plans;
b) Enrollment by commission from units that need graduates; and
c) Enrollment of a small number of self-supporting students outside the state plan.

As to the reform on the job-assignment system, the practice in the past of assigning the graduate to jobs only according to the state centralized plan, has now been changed into a new one so that the graduates are assigned jobs in line with state plans and guiding principles and in the light of their own wishes as well as upon the recommendation of their schools and choice of the units wishing to employ them. The two-way selection exercised by both graduates and employing units have been put into practice. In order to bring into play the students' enthusiasm for study, the former people's grant-in-aid system has been replaced by a new system of scholarship and loans in the institutions of higher learning since 1986.

5. Several other measures for reform covered the strengthening of basic education, expansion of vocational/technical education and the readjustment of internal structure of higher education with focus on building the rationally-tiered system embracing a wide range of disciplines had been taken for restructuring education as a whole during the last the years in the country.

It should be indicated that research work and experiments undertaken for educational reform in China have also been carried out in the aspects of educational ideology, course content and teaching methods while the state had given priority to reforming educational system and structure during the past decade.

The Contribution of PRO in China's Educational Reform

Prior to May of 1988, the PRO was the sole organization engaged in comprehensive research work on education within the central government in China. Afterwards, it was split in to two departments: PMLD and NCEDR. Since 1980, the PRO has taken part in studying and drafting a series of important official documents in regard to and with the aim of guiding nation-wide educational reform and development. It has also issued and published several academic books and research outcomes, bringing a great effect upon research and practical activities in the field of educational reform and development within the country. Among its key works and publications are:

1. In 1980, it drafted "Decision of the CPC Central Committee and State Council on Universalization of Elementary Education". In 1983, it drafted

"Decision of CPC Central Committee and State Council on strengthening and reforming rural education". In 1985, it drafted "Decision of CPC Central Committee and State Council on Reform of China's Educational System"; and in 1987, it drafted "Views of the SEDC and Ministry of Finance on Readjusting Administrative and Managerial System of Rural Basic Education", and "Views of the SEDC on Further Strengthening the Leadership of Affiliated Primary and Secondary Schools of Enterprises and Establishments".

2. In 1986, it drafted "The Law of Compulsory Education", "Temporary Provisions on Managerial Jurisdictions for Higher Education" and "Temporary Regulations on Establishment of Higher-Learning Institutions". Since 1988, it has been in the process of drafting "The Educational Basic Law of the People's Republic of China".

3. In 1987, it organized the drafting and publishing of "Research on the Structure of Higher Education in China", "Trends in the Development and Reform of Secondary Education in the World" and "Research on the Ways of Training Higher-Level Specialized Personnel in the field of Applied Sciences". In 1986 and 1988 respectively, it drafted and published "Trends of Educational Reform in Advanced Countries" and "Standards on Classification of International Education".

During the period of 1984-1988, the PRO had also drafted and submitted "The National Report on Education of China" to 39th-41th Sessions of the International Conference on Education.

Conclusion

Educational research with particular focus on macro matters and as a foundation for guiding educational practices is oriented towards development and reform. It is undertaken to promote scientific basis for the development of educational policies by government and expand the cause of education at the state or local level. Due to the deepening awareness of the issue, research institutes in China have gradually shaken off the model of "academic institutes" which gave more emphasis on theoretical study and book knowledge. They have started undertaking active research work directed towards responding realistic issues and problems pertaining to educational practice as well as providing government with information that will serve as inputs in its policy and decision-making activities. Evidence showed that the integration of macro- and micro-level work, disciplinary construction and providing service for policy making is necessary means of developing the educational research activities within the country. It is an important aspect in the modernization of China.

Fiji

The Ministry of Education has a department of Research Training and Development which over the years of its existence and operation has conducted the following research.

Types of Research

1. The Ministry of Education has carried out research strategies and techniques to establish ways and means to improve and develop the quality of education suitable to Fiji's needs.

2. Research has also taken place to identify the relevance of Primary and Secondary Curriculum that is suitable, to the changes brought about by development taking into account the cultural norms and traditions of the society.

3. Research has also been conducted to try and determine the extent of staff development and human resources availability and spread in education districts and schools.

4. Research has also been conducted on the necessary physical development in schools, teachers' quarters, and other institutions for the promotion of cognitive growth, academic development and progress that is conducive to learning.

5. Research has also been conducted on the necessary solutions to address the problem of academic disparity between Fijians and Indo-Fijians at:

   a) the Secondary level; and
   b) the University of the South Pacific - Foundation level.

6. The Ministry of Education has also conducted research to try and find out how effectively and efficiently the professional input of teachers can be improved and developed.

7. The Ministry of Education has conducted research on ways to assist boarding facilities in rural schools.

8. The Ministry of Education has conducted research to work out a system where school establishment can cater for the geographical scatter and the difficult rural locations of most Fijian schools.

9. Research has also been conducted to find ways and means to address the problem of teacher shortage.

10. The Ministry of Education has conducted research on the possibility of setting up an effective career and counselling advisory services to cater for the needs of the country.

11. The Ministry of Education has carried out research on ways to minimize the high failure rates of Fijians in Science subjects at the Secondary and Foundation levels at University of South Pacific.

12. THe Ministry of Education has carried out research on the relevance and reliability of having a localized curriculum and examinations.

13. The Ministry of Education has conducted research on the possible ways and means to minimize the problem of school dropout at both primary and secondary schools.

14. The Ministry of Education has conducted research on the desirability of introducing compulsory Primary Education.

15. The Ministry of Education has carried out research on the merit and demerits of developing primary school teachers having equal status as of secondary teachers.

16. The Ministry of Education has carried out research on a systematic way to effectively and efficiently assess teachers, head teachers, principals and heads of departments' performance.

17. The Ministry of Education has carried out research and examined the anticipated analysis on the type of compensatory arrangements to be given to teachers serving in rural schools.

18. The Ministry of Education has conducted research on the secondary school teaching programme and the need to expand and make more comprehensive new subjects designed to increase the prospects of school leavers for jobs and self employment.

19. The Ministry of Education has carried out research and devised a co-operative strategy whereby the Technical section and the Curriculum Development work together to involve teaching and training programmes suitable for different localities.

20. The Ministry of Education has conducted research on the effectiveness and reliability of catering the foundation courses back into the formal school system.

21. The Ministry of Education has conducted research on the possibility of establishing a criteria of choice in setting up form 7 facilities in committee to run secondary schools.

22. The Ministry of Education has conducted research the justification and establishment of a nation-wide parental education programme.

Reform Actions

After the research was conducted the Ministry of Education incorporated the following reform actions leading to the formulation of policies and recommendations.

It was found that the establishment of pre-school is an integral part of the formal education system. The Ministry of Education sees that there is a correlation between pre-school and the intellectual development of a child. The Ministry has now formulated a policy that pre-schools be developed as part of the formal education system.

The Ministry encourages committee-run schools to set up pre-school centres in the rural areas, and supplies suitable educational materials and co-ordinate the development of pre-school centres.

At the primary school level, the Ministry of Education introduces extra-curricular activities that exposes the students of various ethnic groups to their culture and traditional heritage. For example, in Fijian schools the students are encouraged to make artifacts out of local materials. Artifacts such as mat making, carving, making pottery, etc. Indian schools are encouraged to teach vernacular and to observe religious beliefs and rituals.

Physical Education and Health is a lesson now being taught as part of the formal school system. The belief being to develop the child's physical, spiritual and mental well-being for cognitive development.

Schools are encouraged to carry out basic gardening skills together with simple technology on 1) crop preparation, 2) soil, and 3) soil conservation.

Teachers are recruited from time to time to attend refresher courses, and are encouraged to take up units at the University of the South Pacific. The main objective is to boost the level of morale and teacher motivation towards professional input in the classroom and the impartation of knowledge.

The Ministry has four educational districts. Due to the remoteness of school in the rural area, these schools are unfortunate not to be visited. In order to keep track with the work of teachers, the Ministry of Education has increased the number of Educational Advisers that hold the responsibility to supervise and assess school activities, and teacher development and effectiveness.

One hundred and fifty Educational Media Centres are anticipated to be established to increase the supply of books and other learning and teaching resources to primary schools.

The Ministry of Education is revising the proposal to re-introduce country allowance to induce better qualified teachers to serve in rural schools.

The teaching of vernacular subjects has now been introduced at the form five level, and students are required to sit its examination in order to qualify on certain career choices.

Technical subjects and basic technology introduction are now being taught. The composition of subjects includes:

1) Industrial Arts - Carpentry and Joinery (Forms 5 & 6)

- Engineering Shopwork (Forms 5 & 6)
- Technical Drawing (Forms 5 & 6)

2) Home Economics - Food & Nutrition (Forms 5 & 6)
- Clothing & Textiles (Forms 5 & 6)

3) Agriculture - Agriculture Science
4) Commercial Studies - Advance typing (Forms 5 & 6)

The vocational programme was aimed to provide training in various skills for paid self employment and for better living. The course includes: Carpentry & Joinery; Motor-Mechanics; Food Catering; Tailoring; Agricultural Engineering; Secretarial Studies; Computer Studies; and Teacher Training. Students participating in these courses were paid and provided free training.

Secondary schools are offering Accounting in form 1 and 2. Together with this is economics and other consumer topics. A resource booklet has been prepared for the teachers' scheme of work in teaching commercial subjects.

Teacher accommodations in the rural has been reviewed and construction of new teachers' quarters has also been initiated. Schools managed by committees and various boards of governors have their new school buildings constructed and the existing ones renovated and repainted.

More education officers have been selected and posted out into the various education districts to supervise the teachers' performance and assess the professional input of teachers inside the classroom. From time to time, the Ministry's In-Service Training Section selects teachers from both primary and secondary levels to undergo refresher courses to increase the level of motivation.

The research has revealed the difference between Fijians and Indo-Fijians in academic achievement and performance in science subjects and the number of passes. Indo-Fijians are more successful in science and other analytical subjects whereas Fijians are more prone to social science and arts subjects. As a result of the research it was found more Indo-Fijians graduated with science and other technical subjects compared to the Fijians. Prioritizing Fiji's needs and development, the ministry sees this as a problem to manpower progress and growth. This belief led the Government, Ministry of Fijian Affairs and the Ministry of Education to set aside a budgeted $3.5 million to upgrade Fijian education in all its facets that is physical, intellectual, professional and emotional and social at the community level and institutional level. This financial assistance is also directed towards providing scholarship to upgrade teacher qualification.

In accordance with the present aim of the government, the Ministry of Education has established a positive discrimination strategy towards Fijian education.

1) The recruitment of expatriate teachers to be posted to selected Fijian secondary schools to supervise the teachers of pure science subjects and to implement programmes that would benefit the students career choice.

2) The Ministry of Education has a portfolio in its section known as the

Fijian Education Unit. Its main function is solely to see that Fijian schools are properly supplied with textbooks, science materials, good laboratories equipment, and library books and other resource materials.

3) In addition to this, research has also revealed that the parents and guardians at home have a very low attitude and motivation towards their role as foundation layers of learning and child rearing and cognitive development. Due to this, the Fijian Education Unit sets up a Parental Centre of Education. The centre is planning initial moves on how to address the community at large and how effective its strategy would be to disseminate information in order to assist and minimize the problem of low motivation, esteem and morale.

4) The Ministry of Education has also strengthen its staff guidance and counselling committee. This committee interviews students to prioritize personal commitments, plan study itinerary and how to set objectives. This strategy is mainly used at the secondary school programme.

As a result of this research, boarding facilities were provided to rural Fijian primary and secondary schools that are remote. Majority of the Fijian students attend rural schools. The Ministry has initiated the establishment of good boarding facilities to accommodate students coming from villages and settlements that is far from the school.

A plan of activities has been put forward by the department of development in the Ministry of Education to address the problem of remoteness. This problems was possible by accommodating the Provincial Council boundary location to decide on the establishment of schools so that the choice of a locality should be central so that it is able to serve other communities . l villages.

The Ministry has studied the demerits and merits of establishing its own localized examination. At the moment, the Ministry of Education has done a lot of review and consultation at our local University and the New Zealand board of examinations. To check for reliability and validity both parties came up with a positive report. Now the end of form 6 examination that is the University Entrance Examination has now been replaced by a locally organized examination known as Fiji School Leaving Certificate (FSLC). The year 1989 is the first year that this examination will be held.

The dropout rate is escalating year by year and the Ministry, after a research, has formulated measures to address this problem.

1) To mobilize parental education and publicize widely their role and responsibilities on child rearing, motivation, and aspiration.

2) So many people in the rural do not have a regular source of income, and the Ministry of Education is now having plans to increase fee-free grants to parents and work out other forms of assistance to meet the needs of the parents.

This reform action is mainly to encourage primary school teachers to remain at the primary school level after a refresher course to upgrade qualification. It has been agreed in principle that the level of pay between

teachers in the primary and secondary be the same. This is done mainly to minimize the draining away of teachers in the primary to the secondary.

The foundation courses offered at the local university are reviewed and revised. As a result, selected schools are chosen to take form 7 programmes similar to the courses offered at the university. The main idea behind this move is better control supervision is done at school and students are better prepared to undergo the university study programme at degree levels.

The criteria have been established that are to select committee-run schools for the introduction of Form 7. The criteria being: (1) it has the potential supply of staff; (2) good laboratories and chemical supplies; and (3) good supply of textbooks.

The University of South Pacific

The following below is a list of researches being conducted by some scholars of the University of the South Pacific the Institute of Educational Research.

Under achievement of Fijians compared to other ethnic groups in Fiji

The research that was carried out identified the following variables that accounted for differences in performance Fijians and Indians.

Psychological Factors: Motivation This appears to be an important factor in the differences of achievement between Fijians and Indians. Such difference is more marked at the high school level. For example, the New Zealand University Entrance results in 1978 showed that 880 passes: 73% were Indians, and 19% were Fijians. Certainly there is some evidence that Indians have higher educational aspirations than Fijians. This may suggest Fijians are less competitive in learning situations. This is just a hypothetical assumption. It would also be preferable if further researches could be conducted to investigate - " Would the co-operative attitude of Fijians contribute to better academic achievement?

Communal Conflict: After a research, it was found communal ways of life of the Fijians make them more susceptible to peer group and other social pressures. They have to meet social obligations which determine their acceptance in their community to which they are expected to return. The higher they go up the school system the more they become alienated from their peers in the village. A further study is now in progress to try and find if culture conflict explains the ambivalent attitude of Fijians to schooling and academic achievement.

Tradition of Academic Scholarship: The Indians have a strong literacy and academic tradition in Indian to draw from a rely on, while they develop their own traditions in Fiji. Fijians on the other, have on comparable academic and literacy tradition. This may well develop in time Fijians have been most successful in military, administrative and political leadership and it is pos-

sible that Fijians in schools continue to see their future in these areas as against the more academic type of careers as against the more academic type of careers which require high individual academic achievement.

Institutional Factors: Rural/Urban Factors: Most Fijians live in rural areas and attend rural schools. These schools, particularly Junior Secondary schools have less equipment and for library facilities. A national survey in reading (Elley and Mangubhai, 1979) showed a large number of urban-rural differential. Examination results in high schools also show a great difference. It is possible that the poor performance of Fijians is due to their attendance of rural high schools. This information needs to be confirmed after another research is done to survey existing becoming facilities of the school in different areas.

The above factors have been researched by the University of the South Pacific (Institute of Educational Research) on the causes of underachievement of Fijians compared to Indo-Fijians. Most of the factors highlighted indicate the existence of intangible factors that have accrued that affect Fijian education progress and growth.

These factors, vary if researched thoroughly, would be very interesting, especially when variables could be co-operated and analyzed, and then policies formulated to address the anticipated problem of academic disparity.

The institute of education as a result of its research activities and priorities have worked closely with the Ministry of Education, Department of Research, putting together workable reform actions and planning strategic measures to address the submission of policies and its long term effectiveness to the overall education process and development.

The Ministry of Education looks forward to the co-operation of member countries in this Regional Seminar, to put together a sequence of assistance to form a critical body of research techniques and guidance where the issue of education could be particularized to meet the needs of developing countries.

Indonesia

I. Educational Policy Research in Indonesia

A. Major Institutions Engaged in Educational Research

Basically there are two kinds of major institutions in Indonesia which are engaged in major educational research. One is the Office of Educational and Cultural Research and Development (known in Indonesia as Balitbang Dikbud or formerly as BP3K or BPP), and the other is the Institutes of Education (IKIP) and the Faculties of Education (FKIP) in the universities. The first institution (Balitbang Dikbud) is one of the main units within the Ministry of Education and Culture (MOEC) whose its main task is to plan, conduct and coordinate educational policy research and development within the MOEC. The latter are the institutions whose main task is to train teachers for secondary schools, and conduct mostly basic research in education and applied research in teaching and learning processes. A number of policy research studies are sometime also conducted by these institutions, but the scopes of this research are usually at a lessor extent. Policy research studies with a national scope conducted by these institutions are usually contracted from the Directorates within the MOEC. Balitbang Dikbud also often works with these institutions in conducting its research studies. On the other hand, Balitbang Dikbud conducts a greater number of policy research studies on a regular basis, usually with a national scope.

Balitbang Dikbud consists of 4 centres and one secretariate. The four centres are the Centre for Policy Research, the Centre for Information, the Centre for Curriculum Development, and the Centre for Testing Service. There is another centre outside Balitbang Dikbud which is technically under the supervision of the head of Balitbang, called the Centre for Educational Technology (known as Pustekkom). This Centre formerly belonged to one of the centres within Balitbang Dikbud, and then become an independent centre structurally under the Secretariate General of MOEC.

B. Types of Research Conducted

As their names imply, these five centers have the following major tasks. The Centre for Policy research has the major task to plan, conduct and coordinate policy research in education and culture in general. The Centre for Information is to plan, conduct and coordinate data collection related to school statistics; develop annual school statistics, and conduct quantitative future planning in education and culture (e. g. conducting a preparation of a five year development plan in the field of education and culture). The Centre for Curriculum Development is in charge of research and development related to school curricula, especially for primary and secondary education. The Centre for Testing Service is responsible in conducting research and development related to school testing and examination, such as the development of a test item bank, and methods of effective tasting and examination.

Improving Linkages between Research and Educational Reform

The Centre for Educational Technology is to conduct research and development of innovative technology in the delivery systems at school and training (e.g. developing innovative educational media such as slides, audio cassettes, video programs, and films).

There are various types of research conducted by Balitbang Dikbud and Pustekkom. These include, for example, surveys, case studies, evaluations studies, experimental studies and documentary studies (e.g. content analysis). Every year, each centre mentioned above conducts about ten topics of studies or development programs to serve the Minister and other Directorate Generals or decision makers in the MOEC as a basis in formulating his and their policies. For example, in this fiscal year (1989/1990), both Balitbang Dikbud and Pustekkom are conducting 16 research studies and 32 development programs. The research studies are conducted to get the results which later can be used either to conduct a further development study or to provide necessary information for the decision makers to formulate policies. Thus, these studies usually produce results which have less direct application. Examples of these research studies are given below:

1. IEA Reading Literacy Study

The main objective of the study is to find out the reading ability of the students of 9 and 14 years old in the country. This study has just begun this year. This is a part of an international study coordinated by IEA.

2. Studies on Teachers' Performance

The main objective of the study is to find out the teachers' ability in understanding the teaching contents. These are a series of studies of teachers specialized in main subjects such as science and mathematics. They started in 1985/1986.

3. Case Studies on primary education in isolated remote areas

These are a series of studies whose objective is to find out the provision of primary education in isolated areas of various kinds.

4. Mid-Term Evaluation of the Non-formal Education Project

The mid-term evaluation of the Second Non-formal Education Project in Indonesia was just completed in 1987. On the other hand, the development studies or programs are conducted so that their results can be applied or used directly by the decision makers. These activities are sometime the follow-up of research studies conducted earlier. Most of the field studies of this kind are experimental studies or action research. Examples of these development studies or activities are:

1) The development of a model for 9 year basic education

The main objective of this action research is to develop a model

which integrates the education of the primary and junior secondary schools. This is in response to the government's decision to launch the universalization of 9 year basic education, after the universalization of the 6 year basic education which was generally successful.

2) The development and dissemination of the Student Active Learning Approach

This project started in 1979 and is well known as the Cianjur Project. Its main objective is to develop the teachers' support systems at primary schools.

3) The development of management information system

The main objective is to develop the system with a computer network.

4) The development of Open Junior Secondary Schools

The main objective is to develop a school which adopts distance learning for its students.

All these research studies are mostly funded by the government through its annual development budget.

C. The Conduct of Educational Research and the Utilization of its Results

As mentioned before, all of the policy research studies and development activities conducted by Balitbang Dikbud and Pustekkom are to serve the minister, the DG's or other decision makers within the MOEC. Some of the topics of research and development activities being conducted came from the DG's or the minister. While some other topics came from within Balitbang Dikbud itself, in response to the problems being encountered by the MOEC in achieving its objectives according to its short-term planning (annual ministerial policy) and medium-term planning (five year development plan).

In conducting the research studies as well as development programs, Balitbang Dikbud adopts an "interactive approach" in which the relevant parties such as potential users of the studies or programs, researchers, relevant experts and educational practitioners get together at general strategic steps of the studies or programs to discuss the studies or programs. All of them are usually involved in reviewing the design, instrumentation, and reports of the studies or programs. This approach is conducted to ensure that the studies can be conducted more effectively to achieve their objectives, and more importantly that their results will be more likely used by the potential users.

The results of the research studies or development programs are usually written in two forms, namely, technical and executive reports. The technical report contains detailed results of the studies. The executive report contains only a summary of the results. The latter is especially directed for the decision makers. Most of the study reports are circulated in a limited number to the parties concerned. Wide publication of the studies

has not been done because of the nature of the studies (policy studies which sometimes produce quite sensitive results), and probably also because of a lack of research journals in the country where the reports are published.

The reports of the studies or programs are usually sent to the minister and relevant decision makers for consideration. The dissemination of the results actually has begun long before the reports are published, because the relevant parties have usually been invited to review the strategic steps of the studies or programs as mentioned before.

The results are also disseminated through regular meetings among the DG's chaired by the minister himself (Rapat Teras) or through direct contacts with the directors or director generals through other occasions, both informal and formal.

II. Educational Reform Actions and Contribution of Educational Research

Since the present government of Indonesia launched its educational development programs through the five year development plans (now we are in the first year of the fifth plan), there have been many reforms conducted in education in terms of quantitative as well as qualitative aspects. The following are a few examples of the major reform actions which have been conducted so far, together with the contribution of educational research in the reform actions.

A. Quantitative Reforms

For the first two decades the student enrollment in all levels of schooling has been increased greatly to meet the increasing social demand for schooling. Students enrollment at a primary school level has been more than doubled from 1971 to 1988/1989 (from 12.9 to 28.9 millions students). The present net enrollment ratio is 99.6%. The rest who are still being deprived of primary education are the pupils who live in isolated areas, those who come from poor families, and the ones who are physically and mentally retarded.

In line with the big increase in the primary school enrollment, the enrollment at the junior secondary school has also been greatly increased (from 2.9 million in 1979/1980 to 7.7 million pupils in 1988/1989, with the enrollment ratio of 29% and 65% respectively). Similarly the student enrollment at senior secondary level has also been increased from 1.2 million to 4.5 million students, with enrollment ratio of 12% and 37% respectively.

The student enrollment at the tertiary level in the government universities has also been increased from 354 thousand in 1979/1980 to 1.7 million students in 1988/1989, with the enrollment ratio of 2.2% and 8.5% respectively.

To increase those student enrollments, a lot of development activities have to be conducted, such as the construction of thousands of new school buildings, and the recruitment of a great number of new school teachers. Balitbang Dikbud has taken an active role in these development programs, according to its function, such as in planning and evaluation programs. For in-

stance, it has conducted an action research on school mapping in order to plan for the allocation of new school buildings for primary schools. It has also conducted a number of evaluation studies on programs such as the evaluation of the effectiveness of the provision of new school buildings for primary school. Balitbang Dikbud is also in charge of the evaluation and planning of the five year development programs in the field of education.

To accommodate primary school aged children living in isolated areas, Balitbang Dikbud has also developed through action research a primary school with multiple grade teaching (known as small school). Packet A, non-formal program has also been provided to accommodate young children and adults who cannot attend the school regularly everyday to get primary school equivalency programs.

Research is now being conducted to develop an open junior secondary school (SMP Terbuka) to accommodate 13-15 years old pupils who live in remote or isolated areas. Research is also being undertaken to develop a model of the universalization of 9 year basic education.

To provide education for secondary school leavers and teachers who have difficulty in attending lectures everyday at higher education institutions, the government has established an open university for them in 1984. This university is similar to any other ordinary public university except for its delivery system being adopted. It relies mostly on distance learning, through modules, radio programs, audio cassettes, and television programs. About 137,000 students were enrolled in its various programs in 1988/1989. Many, if not most, of its key personnel, including the Rector himself were formerly the staff of Balitbang Dikbud or have been working with this office.

B. Qualitative Reforms

Major educational reforms have also been conducted to improve the educational quality in line with the improvement in educational equality. The following are examples of the major reform actions being conducted recently.

To improve the quality of education at primary and secondary levels during the last fifteen years, the government has produced over 900 million copies of textbooks for the students and teachers, and provided in-service training programs for most of the school teachers. Teaching aids, such as science kits have also been provided for the schools. These programs were conducted party on the basis of research carried out in the past by Balitbang Dikbud. It has also conducted evaluations on the effectiveness of the programs.

Research had also been conducted which led to the development of the 1975 curriculum for primary and secondary schools to replace the old 1968 curriculum. The development of this curriculum was conducted by Balitbang Dikbud. The new 1975 curriculum contains a much more detailed content and the sequences of each subject being taught.

The 1975 curriculum adopts an integral approach in which several similar subjects are grouped into one integrated subject matter. For instance, history, economics, geography, and civic education are grouped to be-

come social studies for primary and junior secondary schools.

Based on evaluation studies, the 1975 curriculum was improved in 1984. In this improvement, the learning contents which overlap each other were discarded, and certain contents of a subject were reduced to make it teachable within a prescribed period of time.

Further research on curriculum is now being undertaken to develop various local contents suitable for local conditions to be taught in schools in addition to the national core curriculum which is the same for all schools.

To improve further the primary school quality, an action research has been undertaken to develop a teacher support system. It was started in 1979 in 3 sub-districts at the Cianjur district, in the West Java Province. The main objective of the system is to promote better and more active learning at school. The out standing feature of the system is that it adopts "student active learning" approach in which the teacher encourages to discuss the lessons with their peers, ask questions to their teacher, etc., instead of the teacher giving lectures most of the time, while the students listen. Another important characteristic of this system is that it encourages the headmasters and school supervisors to give more professional support instead of conducting administrative supervision to teachers. Now, this system has been disseminated to more schools in the Cianjur district itself, and to selected districts in 6 other provinces.

A lot of evidence from research has shown that the quality of primary school teachers in general at present is still low. To improve the quality of the teachers as the product of the teacher school for primary education (SPG) which runs for 3 years after junior secondary school, the government has decided to abolish this school gradually to be replaced with a DII program (2 years after Senior Secondary School). This new program is now still being developed. To further encourage the teachers to work better, this year the government has announced the implementation of a new regulation related to functional position for all teachers. In this new regulation, a teacher can be promoted to the highest rank of public service depending on the teachers' performance and ability. Better teachers will be promoted faster than the others. This new system of promotion is the result of many years of research by Balitbang Dikbud.

A reform in the management information system is also being conducted by developing a computerized system. This system is intensively developed in the centre (Balitbang Dikbud) and at the offices of education in the 3 provinces. The project among others involves the provision of computer hardware, the development of computer software, and the training of personnel. Beside these, a P.C. computer is also provided for the Office of Education in each province in relation to this program.

To strengthen local capabilities in conducting policy research and development in the field of education, at present Balitbang Dikbud is developing research networks in the provinces which involve general institutions in each province such as universities, the institute of education, the provincial government, the provincial office of education, etc. A number of provinces now have allocations in their annual local budget for educational research purposes conducted by the staff of the local research network.

To improve the quality of higher education, many educational major reform actions have been conducted in recent years. These include the followings.

A large number of teaching staff have been sent for advanced training at home and abroad regularly. At any one time, approximately 10% of the faculty members are engaged in some kind of advanced staff development provided by the MOEC.

A great deal of library books and other educational equipment have been provided for higher education institution through various development projects.

Indonesia higher education has a full spread of courses and programs, with increasing emphasis on the exact sciences and on technologically oriented programs, evidenced by the construction of about 30 polytechnic institutes in the past decade in response to the technological development of the country.

To improve their internal efficiency, higher education institutions have recently adopted a semester credit system in their teaching program, in which students can choose different numbers of courses. Those who fail a certain course have only to repeat that particular course. This system was adopted from the system in the developed countries.

All the major educational reforms above, in one way or the other, are partly or mostly affected by prior research which have been conducted.

Japan

1. Introduction

The linkage between educational research and practice is an emerging concern of many countries, both developing and developed. At a conference on this topic sponsored by the UNESCO International Bureau of Education in 1981, views from all over the world on the current and desirable state of educational research were studied on the basis of the premise that efforts to improve the quality and content of education inevitably give rise to further development in educational research. Special attention was given to the strengthening of school education system, and within this area, emphasis was put on research related to the qualitative reform of the contents and methodology of education as well as to improving children's desire to learn and the motivation of teachers.

Dr. Hiroshi Kida, former Director General of NIER presented, at the above conference, a paper on "Educational Research and Practice". The Introduction to the paper contains the following text:

> "Educational research has close links with educational development. The modern state has recognized the importance of national education and has made efforts to promote the expansion and development of education, which have inevitably accompanied the progress in educational research.
>
> The educational policies of a state require by all means researches to be carried out on formulating and implementing such policies, and efforts to improve instructional activities on the part of teachers call for the need to conduct research and study on their teaching activities. The development of educational policies accompanies the expansion of educational research, and the development of educational research subsequently contributes to the substantial improvement of educational practices."

NIER carried out a research project entitled "Comprehensive Study on the Role of the Educational Research in Reforming Systems, Contents and Methods of Education" for two years from 1982 with the scientific research grant of the Ministry of Education, Science and Culture. A report was published in March 1984 and the following several paragraphs are its extract.

> "The aim of this research project was to elucidate what role educational research performs in the reformation process of educational systems, contents and methods. In order to approach this theme, three research teams were organized to carry out: (1) a national survey on classroom teachers, (2) a survey of the situation in other advanced countries, and (3) a historical review of the linkage between educational research and educational reforms in the pre- and mid-World War II period.

In the national survey, 2,425 replies were received to a questionnaire which had been sent to a randomly selected sample of classroom teachers at the middle leadership level (*SHUNIN* - head teachers). In the questionnaire, it was attempted to identify: (a) the influence of various educational publications including research reports (b) teachers' needs and attitudes to educational research, (c) the desirable organization of educational research and development, and (d) the extent of utilization of various kinds of educational equipment and educational research outcomes developed and produced by teachers themselves.

Some of the major findings of this research project were as follows:

(1) A majority of the teachers who responded to the questionnaire thought that "many research are conducted by universities or national research institutions, but most of them are unrelated to practitioners' needs in school, and only seldom are there clues on how to solve the hard problems impinging on teachers;

(2) Respondents, however, showed a strong desire to be involved in in-depth research projects and exposed to research results;

(3) Respondents had a view that leading educational theories in future would be increasingly produced by practitioners themselves;

(4) A majority of the respondents agreed with the opinion that joint studies and group discussions among classroom teachers should be emphasized as research methods.

These results seem to imply that there is a profound need for a closer relationship between universities or research institutions and educational practitioners in order to further promote usable research and development projects as well as the dissemination and delivery of research results.

From the study of the relationship between educational research and practice in such countries as U.S.A., U.K., France, Federal Republic of Germany and U.S.S.R., it was found that while specialized institutions for educational research played the major and promoting role in educational research, in all these countries, practical and developmental research was also actively carried out by teachers and other practitioners in experimental schools or similar institutions."

2. *Agencies Involved in Educational Research*

In Japan, there are many institutions that carry out educational research, and they include such national government institutions as: a) National Institute for Educational Research (NIER); 2) National Institute of Special Education (NISE); and c) National Institute of Multi-media Education.

There are nearly 500 research institutions throughout the country es-

tablished by prefectural or municipal governments, in addition to a certain number of privately established institutions for educational research. These various institutes carry out practical research closely related to the classroom activities in collaboration with local schools and teachers. Many of the public institutes have at the same time the function of conducting in-service training programmes for teachers within its area of jurisdiction.

The National Federation of Educational Research Institutes (NFERI) has been established as a national organ representing national, prefectural and municipal research institutes including some privately established educational research institutes. The Federation not only carries out liaison functions among its member institutes, but also organizes nation-wide joint research projects. At present, NFERI has 240 member institutes and its secretariat is located at NIER. The Director General of NIER serves as Chairman of the Federation.

The educational administration agencies such as the Ministry of Education, prefectural and municipal boards of education also conduct educational survey and research in order to collect information and data necessary for their policy formulation. In addition, they request schools to conduct research projects in specific topics with the aim of contributing to the improvement of teaching methods and content. The research projects of this type are usually conducted for the period of one or two years on a specific research topic. Currently, more than 800 elementary and secondary schools are designated by the Ministry of Education as experimental schools for such projects.

Universities, in particular, the faculties of education attached to national, public and private universities also conduct educational research. In Japan, one can find at least one or more national teacher training institution or the faculty of education attached to national university in each of the 47 prefectures, and each of these teacher training institutions or the faculties of education runs its own attached elementary and secondary schools for the purpose of implementing experimental and pilot studies on instructional activities.

In addition, there are more than 40 academic societies concerned with educational research, for example, the Japan Society for Educational Studies, the Association of Lifelong Education, and the Japan Comparative Education Society. As well as these, there are a large number of educational study groups which draw their membership mainly from among teachers and carry out research activities concerned with educational practice.

3. *NIER*

Organizationally, NIER is attached to the Ministry of Education, so it does have the role of providing the Ministry with support. However, NIER's role is not to provide data or materials to immediately support the policy-making of the Ministry of Education. Such research data are to be provided by the units such as the Research and Statistics, and Planning Division. Dr. M. Hiratsuka, who was the Director General of NIER when Unesco-NIER regional programme was launched, always emphasized the three basic principles underlying NIER's research projects as being scientific, long-term and fundamental.

On the basis of these principles, NIER aims not only to provide supports to the educational administration, but to make contributions to the development of educational sciences and to the improvement of educational practices. Unfortunately, NIER has no attached school, but NIER requests schools to cooperate in undertaking practical studies whenever the occasion demands. NIER also accepts teachers from public schools as research fellows and strengthens its links with classroom activities.

NIER underwent structural and organizational reform in May 1989. This reform was carried out to respond to the following recommendation of the National Council on Educational Reform:

> "With regard to the National Institute for Educational Research, it is necessary to strengthen its research functions for contributing to the Ministry's policy-making activities, and to enhance its functions as the national research centre concerning school curricula, teaching materials, teaching methods, etc. From this angle, it is necessary to improve the activities of the Institute by reorganizing its structure and by other means"

In the revised structure of NIER, the number of research sections has increased from 35 to 40. However, the number of actual researchers has increased only by one (due to the policy of the Japanese Government to restrict the number of public officials). At present, there are 93 regular staff at NIER, of whom 71 are researchers. As can be seen from the names of these research sections, almost all areas of education are covered with the exception of few areas such as special education and physical education.

With regard to the appointment of researchers, some staff are occasionally transferred to NIER from the Ministry of Education, but the majority are recruited from university teaching staff, and there are also those who come from local education research institutes. In making new appointments, it is a prerequisite that all applicants should have completed a master's course, and account is also taken of their special fields of interest, professional achievements and future potential.

With the exception of the post of Director General, there is no fixed term of appointment for researchers and the retirement age is set at 63 years old, and normally they continue their research activities at a university after retirement. (The normal retirement age for general public officials is 60.)

NIER has been trying to undertake research projects with the variety of research funds provided by the Ministry of Education and others, and, in return, providing the Ministry and other concerned bodies with research outcomes of a global perspective. The results of NIER's research projects are made public in its Research Bulletin, English Research Bulletin, research reports and monographs, and many other forms of publication. The research outcomes are being utilized not only by the Ministry of Education, but also by bodies responsible for education at local level, educational research organizations, university researchers in the field of education and others.

4. *Major Educational Reforms Undertaken*

This section briefly describes only major educational reforms currently undertaken in Japan. Although it is difficult to pin point the degree of impact given by educational research on the reforms illustrated here, research outcomes are reflected on the most of these reforms.

The National Council on Educational Reform made public 4 reports from 1984 to 1987 consecutively, and the Ministry of Education has started to implement many of the recommendations of the Council after deliberations on concrete action programmes at various advisory organs such as the Curriculum Council, the Educational Personnel Training Council and the University Council.

In response to the recommendations made by the National Council on Educational Reform, reorganization of the Ministry of Education and local boards of education took place, in addition to the restructuring of NIER mentioned above. The reorganization of the Ministry of Education, Science and Culture was carried out in order to ensure a more integrated administration looking towards the 21st century, and the Bureau of Lifelong Learning was created and given the position of the principal bureau to cope with the shift to a lifelong learning society. Efforts for revitalizing local boards of education are also being made by prefectural and municipal governments through the implementation of specific reform measures suggested by the Council.

For the improvement of the quality of teachers, the Council also recommended a number of reforms in relation to teacher related issues. As a result, the teacher certificate system has been revised, and through the creation of special class teacher certificate for Master's degree holders, teachers as well as the students of teacher education are being encouraged to proceed to an advanced study for up-grading themselves. At the same time, the required numbers of credits for obtaining all classes of teacher certificates have been increased, and the duration and contents of practice teaching as well as teaching methodology and students' guidance were extended and improved. In addition, all beginning teachers who work for public elementary, lower and upper secondary schools are now required to undergo one year of initial training immediately after their employment.

As for the higher education, the University Council was established as a standing committee responsible for deliberating on basic issues in higher education and for providing necessary advice and assistance to universities and colleges.

Curriculum reform is also being made through the revision of courses of studies for elementary, lower and upper secondary schools as well as the revision of guidelines for kindergarten education to be put into effect in 1990 for kindergartens, in 1992 for elementary schools, in 1993 for lower secondary schools, and in 1994 for upper secondary schools. In the revised new courses of studies for elementary through upper secondary schools, many specific measures were taken, and for example, a new integrated subject area called 'Living Experience' will be offered in place of Social Studies and General Science for the Grades 1 and 2 of elementary schools.

Lao People's Democratic Republic

A. Preamble

Immediately after the accession to independence in 1949, Lao Government has renovated and improved the system of education which comprised six years for primary, four years for lower secondary and three years for upper secondary schools. Prior to the year 1975, since secondary education was still under the responsibility of French authority, the task in the field of educational research was still in the early stages or even non-existent in the true sense of the word. Later on, a national educational reform was introduced in Lao People's Democratic Republic. This reform consisted of merging the two educational systems, namely: the Lao Patriotic Front Educational System of 10 years (4+3+3) and the former Government educational system of 13 years (6+4+3), into a general basic educational system of 11 years (5+3+3). Since then, the task of educational research has been recognized as one of the many priorities.

B. Major Agencies Involved in Educational Research

In recognition of the crucial importance of educational research for educational reform and innovation, under the responsibility of the Ministers Council and the Ministry of Education and Sports, a number of institutions have been established for undertaking educational research. The major agencies involved in educational research are briefly described below:

1. The Ministry of Education and Sports (MOES)

The Ministry of Education and Sports is the main organization responsible for the implementation and supervision of educational programmes based on the educational policy of the Government.

2. Different Departments within the Ministry of Education and Sports

Within the MOES, there are some departments which are involved directly or indirectly in educational research:

1) the Department of General Education is responsible or involved directly in educational reforms such as:

   - testing and examinations;
   - student enrolment.

2) The Department of Teacher Training is involved in the reform of training and teacher requirements.

3) The Department of Higher Education and Universities is involved in the reform of universities and higher institutes, for planning and human resource development.

4) The Department of Statistics, Planning and Finance is involved in the reform of school mapping, school lay-out, design of building, furniture, equipment and other facilities of schools, budgeting and finance.

5) The Department of Inspection and Control, in close cooperation with the above-mentioned departments and the Research Institute for Educational Science (RIES), is currently responsible for drafting the educational legislation which will soon be submitted to the Supreme Assembly for approval.

3. The Institute of Pedagogy of Vientiane

This Institute is responsible for teacher training, especially pre-service training of teachers for upper secondary school for the whole country. As a part of training, if carries out research in various aspects of teacher education.

4. The Research Institute for Educational Science (RIES)

The RIES was created in 1986. It is a key body responsible for the following activities:

- Study and clear-up the resolutions and directives of the Party and Government, related to the educational sector.
- Explain educational strategy and work out plans of actions for implementing educational strategy.
- Develop the objectives for educational reform in the field of general education.
- Elaborate guidelines for the implementation of objectives for the development of general education.
- Produce programs of study for each level and discipline of general education.
- Prepare texts for publication and provide advice on their use for teachers.
- Finally, it is also responsible for the planning, development and evaluation of curricula for general education.

C. *The Reforms Undertaken/Being Undertaken*

The about-mentioned institutions have undertaken some aspects of reforms which can be categorized as follows:

1. Reform on systems organization and management

In order to fulfil (implement) the Decree of the Ministers Council re-

lated to the re-organization of the MOES Educational Boards have been restructured at each level (from the central to district level).

In parallel with the re-structuring of educational boards, other reforms are being undertaken, such as:

- decentralization of educational management;
- expansion of pre-schools;
- expansion of primary education (for the fulfilment of universalization of primary education (UPE));
- amalgamation of primary schools in remote mountainous areas;
- expansion of secondary schools;
- increasing the investment in education (for the fulfilment of the forth Party Congress: "More attention should be paid and increased investment should be applied to education", and;
- improving co-operation between the State and the people, and between the central and grass-root levels for the investment in education.

2. Reform of curriculum

This reform consisted of various aspects:

- Curriculum revision, which took place in 1987.

- Curriculum development: The reform conducted in this area consisted of providing a balanced curriculum, making connections between subjects, providing an inclusive curriculum and for the personal growth of each student, involving all areas of education in a curriculum partnership aimed at providing quality education geared to the socio-economic development of the country.

- Testing and examinations system: The previous system which set out the regulations for the conduct of examinations was somewhat archaic and cumbersome in its approach to assessing the performance of the students at all levels. Consequently it has been replaced by a new testing and examination system which deals with assessment under the heading of four main principles:

    1) whole-person assessment;
    2) core subject assessment;
    3) assessment of what is actually taught; and
    4) open democratic and fair assessment procedures.

- Educational technology: The development of textbooks and teaching aids (simple and low-cost materials)is under preparation now. The establishment and maintenance of school libraries is planned for 1990-91.

- Technical and vocational education: Reform is dealing with the decentralization of vocational school management and the re-organization of its network.

3. Reform in the field of students and schools

In order to increase participation rate, and to improve retention rate through coping with drop-outs and repetition in general education, as well as for fulfilling UPE, the reform of the enrolment system was undertaken two years ago.

4. Reform in the field of teachers

This reform aims at increasing the number of qualified or trained teachers by training them within the country and abroad. Three years ago, the years of pre-service training for teaching in primary, lower secondary and upper secondary schools were extended. In parallel with the extension of the years of training, the Department of Teacher Training, in co-operation with the Research Institute for Educational Science (RIES) undertook the revision of curriculum, textbooks and programmes of studies, and developed teaching-learning methodology.

5. Physical plant and facilities

In 1985, under the responsibility of the Department of Statistics, Planning and Finance of the MOES a school mapping project and design of buildings project were set up. These projects were assisted by UNESCO in terms of funding and consultancy service.

6. Reforms in the field of higher education

- Increasing the number of tertiary institutions. In order to tackle the shortage of tertiary personnel and to meet the requirement of qualified manpower, the State Committee and the MOES have delegated to the Department of Higher Education and Universities the reform of the planning of tertiary institutions. In the next few years, the number of tertiary institutions must be increased, in particular, in the area of polytechnics and agro-forestry institutions.

- Strengthening co-operation between higher institutions and Society. In order to strengthen co-operation between the university and society, the following measures have been undertaken: further expanding of visit programs to factories and industry, and joint research programs among industry, government and higher institutions.

D. Impacts of Educational Research on Major Educational Reforms

In spite of major educational research having been undertaken in various fields the education sector, some have not exerted high influence on educational reforms.

1. Systems organization and management

The research undertaken in this area has had great impact, especially

in the field of decentralization of education, or re-structuring of the MOES in the expansion of primary and secondary education, and on funding.

2. Curriculum

Education research has had great impact on curriculum, mostly on the revision, development of curriculum and textbooks, testing and the examination system.

3. Students and schools

Research has some impact on the student enrolment system.

4. Teachers

Research has had major impact, foremost on the extension of the years of pre-service training.

5. Physical plant and facilities

With reference to school mapping and the design of buildings, research has had a great impact.

6. Higher education

Educational research has had some impact on the reform of increasing the number of tertiary institutions and of strengthening cooperation between higher institutions and society (factories, industry, government and university: joint research and provision of programs visit).

Malaysia

Introduction

The realization of national unity among the multi-ethnic population is the Government of Malaysia's prime concern. The Rukunegara (National Ideology) proclaimed in 1970, outlines the guiding principles towards this end. The present New Economic Policy, promulgated in the Third Malaysia Plan (1976-1980), with objectives to eradicate poverty and restructure society, also has the creation of national unity as its underling philosophy. Official policies on other sectors have similarly embedded in each the notion of national integration.

In the education sector, the National Education Policy aspires to contribute to the attainment of national unity through providing equal education opportunities for all. A National Educational Philosophy has also been formulated with the objectives of developing individuals in an all-round and integrated manner, to become good citizens who will contribute to the peace and harmony of society and the nation as a whole.

It is within this framework of nation-building that educational research and planning is playing a role in Malaysia. This role is important and very relevant. Outputs of research and planning activities have supplied planners, decision and policy makers with the required data and information for action. The following paragraphs will attempt to explain educational research activities as are found in Malaysia superimposed upon a scenario as just described.

The Educational Planning and Research Division of the Ministry of Education

Malaysia's initiation into educational research started in 1956. This materialized with the setting up of the Educational Measurement and Testing Unit within the Ministry of Education (MOE) on 1st January 1960. In 1963, the Educational Planning and Research Division (EPRD) was established incorporating the Measurement and Testing Unit, and three other units: the Statistics Section, the Curriculum and Textbooks Section and the School Guidance Section. The EPRD was entrusted to carry out research activities and supply statistical data to the other divisions of the Ministry, as well as to other national planning bodies such as the National Development Planning Committee (NDPC).

The EPRD has strengthened organizationally and functionally. In 1970, the Measurement and Testing Unit was transferred to the Examinations Syndicate, while the Textbooks Section was moved to the Schools Division. The scope of tasks was widened and overseas training was provided for the officers. Foreign expertise in planning, research and computer applications was also sought from agencies such as UNESCO and UNDP. The EPRD also acted as Secretariat to the Higher Education Council, and from 1971, to the Education Planning Committee (EPC).

Through the years of 1970-1972, the EPRD was busily engaged in planning. It contributed a great deal in the formulation of strategies of the Third Malaysia Plan which led to the emergence of the New Economic Policy. It also undertook several research studies among which are:

1) The Primary School Mathematics Study, 1970-1973;
2) Preparation of Manual on School Guidance, 1971;
3) Preparation of handbook for Headmasters, 1972;
4) The School Dropout Study, 1972;
5) Small Schools Study, 1973; and
6) Study on Higher Education, 1974.

Within the Ministry of Education, EPRD plays the central role in research activities besides performing the planning function. Lately, EPRD's activities have been streamlined further for better coordination and efficiency. Apart from research and planning, co-ordinating and monitoring educational research activities from all quarters throughout the country, EPRD is also involved with the collection of data, evaluation of educational programmes, and analysis, as well as coordination of matters pertaining to educational policy and its implementation. These activities are distributed accordingly to five major units:

1) The Planning Unit;
2) The Research Unit;
3) The Date Unit, which also oversees the Resource cum Documentation Centre;
4) The Evaluation Unit; and
5) The Policy Unit.

The research activities of EPRD are mainly decision or policy-oriented. Research findings have been utilized or adopted by decision-makers to modify or rejuvenated existing policies, or to formulate new ones and for the enhancement of existing educational services and infrastructure. As far as policy on educational research goes, the following explains the overall position of the EPRD:

> "The nature of the research activities conducted by the Division is characteristically action-oriented as opposed to a purely theoretical research, problem and policy-oriented as opposed to the academic research and applied as opposed to the fundamental or basic research. Hence, the problems and nature of the research projects are generally in response to the needs and requests made by the high-level policy making committees of the Education Ministry" (Hussein Haji Ahmad, 1981)

Basically, there are two types of research activities conducted by EPRD: (1) general educational research, and (2) educational evaluation research. Under general research, the methodologies applied are either descriptive using approaches such the case-study (e.g. The Effective Schools Study, 1989), the survey (e.g. Study on the Status of District Education Officers in Pahang, 1986), or the cross-sectional (e.g. Study of the Impact of the New Economic Policy on Education, 1985).

The historical approach is adopted for predictive purposes; whereby

past events and trends are observed to establish the norms as guidelines for predicting future trends. The calculation of student enrolment projections, numbers of teachers, classes, and other projections utilize such approach. The Planning Unit undertakes the task of making projections periodically to up-data for monitoring and planning purposes.

The causal-comparative or quasi-experimental approach is utilized when prevailing conditions do not allow for a truly experimental research. This might be due, for example, to the existence of an independent variable which cannot be directly controlled simply because its manifestations have already occurred or that they are inherently not manipulable. This kind of research has the characteristics of the descriptive, correlational and experimental. An example of such a study conducted by the EPRD is the Study on the Influence of Environmental Factors on the Achievement of Secondary School Pupils, 1982.

A study seeking to discover the pattern and degree of relationship between two or more variables would use correlational tools for the research. The kind of research is basically exploratory, which firstly is to identify the variables in play in a given situation or problem, and secondly to observe their relationship to each other. An example of such a study is the Correlational Study on Pre-Schooling and Pupils' Achievement in Primary Schools, 1982-1984.

Under evaluation research, the approach can be formative. Data are collected while a programme is still developing or in the process of implementation. Examples of such process-evaluation studies conducted by EPRD are the Study on the Effectiveness of Curses Conducted by the Aminuddin Baki Institute (ABI)- a staff training institution, 1987-1988; and the Study on Management of Students' Hostels, 1980-1981. On the other hand, EPRD's evaluative research can be summative which represents assessment of educational programme(s) which have been completed.

In short, the issues being researched into by EPRD are basically wide-ranging "researchable problems", but which also have implications on policy strategies. They include problems connected with the administration and management of education at various levels; financing and expenditure of the system; general need-assessment studies for special projects; school-related problems such as enrolment, students' discipline; number of teachers, and their requirements and training; and co-curricular activities and the like as determined by the Educational Research Advisory Committee (ERAC) and endorsed by the high-powered EPC.

Research Activities of Other Divisions of the Ministry of Education

The EPRD is not, however, the sole organization engaged in educational research within the ambit of MOE, although the types or research conducted "cut across the spectrum of major areas within the education system" (Hussein Haji Ahmad, 1981). Research undertakings are also carried out by other divisions, namely, the Curriculum Development Center, the Federal Inspectorate of Schools, the Schools Division, Teacher Training Division, Technical and Vocational Education Division and others..

The research undertakings of other divisions are similar in approach and orientation with EPRD's, except that they are generally of a much lesser scale with limited scope and sample selection. They are similarly action or decision-oriented, and descriptive using the case-study or survey procedures. Often, they represent joint efforts between two more divisions of MOE. The following gives brief outlines of their research activities:

a) Schools Division

Research by the Schools Division focusses on the identification of new programme needs related to the management of schools, such as the conduct of co-curricular activities, health education, food and nutrition programmes, student counselling and other supportive services.

Its evaluation studies on the other hand, are concerned with examining problems related to management and implementation of educational programmes at national, state, district and school levels. The Study on Discipline of Students (1987) is an example of this.

b) Teacher Training Division

This division undertakes studies which are related to planning, coordination and implementation of teacher education programmes, development of personnel, and resource management of the teacher training colleges. The studies are small-scale and the use the survey and case study methods.

c) Curriculum Development Center

This division deals mainly with research and the review of curricula aimed at qualitative improvements at the school level. It researches and evaluates the development of various school curricula and their implementation effectiveness. The research also examines pupil factors, such as cognitive, affective and psychomotor developments; and assesses various teaching methodologies in relation to learning outcomes. The baseline for all this is that the school curriculum and any innovation related to it must be relevant to national needs and aspirations.

d) Examinations Syndicate

This division conducts case studies, usually into the performance of candidates in the public examinations. Since this division is responsible for the organization and conduct of all public examinations, its research activities deal mainly on the analysis of examination results, on the applicability of various testing techniques, and the like.

e) Technical and Vocational Education Division

Research activities of this division are needs assessment studies, for example, examining the functionality and relevance of technical and vocational education against the demand for skilled and semi-skilled manpower. The division also undertakes evaluative and formative studies to assess whether the technical and vocational courses offered meet the current requirements of the labour market, as well as being suitable for the purposes of national development.

f) Educational Technology Division

This division carries out small-scale surveys and content-analysis of implemented programmes in relation to further resource needs. The objective is to obtain fresh insights for the production of new teaching and learning support materials such as teacher guide-books, graphics, tapes, films and the like.

g) Islamic Education Division

This division's research methodology is based on the survey and case-study approach, often to evaluate effectiveness in the delivery of Islamic education and instruction in the classroom. An example is the Study on Teaching and Learning of Islamic Religious Teachings in Primary Schools (1988) which was done as a joint effort with EPRD.

h) Textbook Division

This division carries out effectiveness evaluation of their programmes. An example is the Evaluation of Textbooks for the New Primary School Curriculum (NPSC), Level I, 1988-1989.

Research Activities by International Agencies

International organizations such as UNESCO, UNDP, IIEP (Unesco, Paris), the World bank, foreign universities and consultant firms, and others, also play significant roles in educational research activities in Malaysia. These international agencies involve themselves by:

a) sponsoring and financing the studies; such studies are carried out by the EPRD or by other divisions of the Ministry of Education, or on the basis of inter-divisional cooperation; and

b) conducting research on their own using their own personnel, or in collaboration with local researchers such as lecturers from the local universities, either individually or in groups, with the permission of the Ministry of Education or other public agencies such as the Economic Planning Unit (EPU), the Social and Economic Planning Unit (SERU), and the Management and Manpower Planning Unit (MAMPU).

Research undertaken by international bodies and agencies are usually connected with programme or process evaluation. Often, these are on topics or projects which are relatively large-scale, expensive in terms of cost, and time consuming, and sometimes too, needing a wider input of research expertise. An example of this is the School Mapping Study in the States of Sabah and Sarawak (1986-1988) in East Malaysia which is sponsored by the World Bank.

The international agencies are also interested in need-assessment studies. In particular, these studies are undertaken with respect to redressing certain educational system shortcomings, or in regard to providing programmes for quantitative and qualitative improvements. The final report of the study would contain overviews of the situation, and recommendations of feasible strategies to alleviate the problem(s) for consideration by the relevant policy-making committees. An example is the UNESCO Report on Educational Planning and Management in Malaysia, 1977.

Research Activities by Local Universities and Higher Educational Institutions

The local universities (numbering seven) and other higher educational institutions conduct or involve themselves in educational research in one or more of the following ways:

a) They are commissioned by the government and other public agencies or public bodies to conduct research or evaluation studies on educational topics and fields determined by the sponsors/agencies.

b) The universities and institutions may use their own research allocations or grants. Special teams are appointed to conduct the studies; such teams normally comprise selected members of the teaching staff and graduate students of the universities concerned.

c) A number of the teaching staff of the universities act as special consultants or advisers to the research teams consisting of officers from MOE or other agencies; alternatively staff from the universities may be appointed to be members of the research teams.

d) The teaching staff of the universities or other institutions are appointed as committee members or advisers to students who are engaged in research for their theses and dissertations.

Except for the kind of research grouped under (a) above, most of the educational research undertaken by local universities and higher educational institutions can be classified as applied research. These are designed with the objective of sourcing new knowledge as additions to an already organized body of scientific knowledge.

Reform Actions and Contribution of Educational research

Discussion on educational reform actions in Malaysia needs to be juxtaposed with the perspective and understanding of the country's educational history, and against a background of diverse socio-cultural characteristics

of a multi-ethnic population.

As has been mentioned, the country's preoccupation with social integration and national unity issues is discernible in almost every aspect of the social and economic programmes being delivered to the people. Educational programmes and reforms are no less influenced by such preoccupation. In fact, education is being relied upon rather heavily in the pursuit of nation-building.

As far as nation-building through education is concerned, the government has identified and is concentrating on four perspectives, all of which are interconnected and dedicated to the attainment of national goals thus understood. These perspectives are:

a) open access to schooling for all those who desire;

b) consolidation of common curricula in and for all schools, and at all levels;

c) maximizing equalization of educational opportunities; and the equality of opportunities to quality education; and

d) development of integrated and all-round individuals who are knowledgeable, skilled, responsible and useful as citizens through the schooling system.

Due to the nation's historical development, education had not benefited everyone in the early stages of the nation's history. There were imbalances due to differing geographical localities, and heterogeneous cultural and linguistic backgrounds of the people. The types and quality of education were also dissimilar, for example, between the vernacular and English education. These imbalance and dissimilarities were not to the advantage of a young and plural nation like Malaysia. National unity is very much desired; it needs to be obtained at whatever the costs. Thus, addressing the malignant social features, together with the search for solutions is a continuous effort as can be seen from the series of Acts of Parliament and Reports that have been made.

The Razak Report (1956), the Rahman Talib Report (1960), the Education Act (1961), and the Mahathir Report (1979) and related enactments and regulations can all be considered as major reform actions, representing the embodiments of national aspirations to bring about justice, equality, peace and harmony to all citizens through the educational process. These documents have become the reference norm with which the overall conception of the National Education Policy has been gestated. What we have as educational programmes and reform actions today are actually attempts to translate and implement policy into realizable forms with national unity objectives sublimed in the background.

Presently, it is felt that Malaysia has achieved remarkably in the task of providing basic education for all. Now it is time to bring about qualitative improvements. Through the New Primary School Curriculum (NPSC) together with the Integrated Secondary School Curriculum (ISSC), it is hoped that Malaysian school-children can be developed into all-round and integrated in-

dividuals. Good citizenship in everyone is the ultimate objective.

There are other minor reports which have bearings on both the quantitative and qualitative improvements of educational activities in Malaysia. Among them, the School Dropout Study, also known as the Murad Report (1973), and Report on Standards of Education is Schools (1982) are of significance.

Insofar as educational research in Malaysia is concerned, it has played its expected role remarkably as mover for educational reform actions. The several research studies which have been mentioned and by virtue of their action-oriented characteristics, are actually important inputs for the explanation and solution of larger and more complex problems. Aggregated together, the research findings do give a clearer picture of the issues and have formed the basis for a unified policy decision on whatever matter is at hand.

Similarly, underling and prior to each of the various Reports and Acts cited, there has been a series of small-scale projects. The findings have acted as foundations to finally culminate in the reports proper. For instance, the Mahathir Report (1979) has been largely responsible for the introduction of the New Primary School Curriculum (NPSC) and later the Integrated Secondary School Curriculum (ISSC). This report is actually the gist and compilation of several smaller reports, submissions and memoranda obtained from the public and interested groups.

Conclusion

This country report on educational research and educational reform actions in Malaysia has to explain the major part played by the Ministry of Education and other institutions in relation to educational research activities. Most of the Ministry's activities, with EPRD having the main role, are action-research undertakings pertinent for decision and policy making. As regards the contribution and impact of educational research to educational reform actions, it cannot be stated concisely and precisely that this or that particular research has taken effect in such and such reforms. To examine education reform actions as are found in Malaysia, it is best to explore and extract reformation ideas globally from the provisions of the Educational Acts, and from the recommendations of the various Reports.

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Nepal

Introduction

It was only beginning in the early 1950s that educational research drew interest of educators, policy makers and planners. The Nepal National Education Planning Commission (NNEPC) report (1956) was a landmark in educational research. Despite the geographical difficulties, nationwide survey was conducted before the Commission prepared its report. More efforts were seen in the 1960s when several individuals from Nepal did their doctoral work in education and wrote their dissertations on aspects related to education in Nepal. The 1970s will be remembered as the decade if research since the NESP required master level students to write a thesis and engage in National Development Service which involved preparation of village profiles.

Agencies Involved

In the 1970s and 1980s, many research centres pertaining to educational research were established through private initiatives. Some of them like New Era (New Educational Reform Associate) started with research in education only and later diversified their activities to include agriculture, economic planning, feasibility studies, etc. Other research agencies were established to do research on whatever they could find including education. So they competed in the open market for conducting research activities to meet the needs of such agencies as the Ministry of Education and Culture, National Commission on Population, USAID, UNDP, UNESCO, UNICEF and other organizations. It is estimated that there are 100 such agencies established for the purpose of carrying out research activities. Some of them have already faded away. Some do a good business. A list of some of the active research organizations is given in Table 1.

Table 1: Major Educational Research Institutions

Institutes	Area of Research
1. Research Centre for Educational Innovation and Development (CERID)	- Planning & Management - Curriculum & Instruction - Educational Technology - Educational Statistics - Project Evaluation - Higher Education - Education & Rural Development - Educational Evaluation
2. Research Centre for Nepal and Asiatic Studies (IDA)	
3. Research Centre for Applied Science and Technology (RECAST)	

4. Research Division, Tribhuvan University	
5. New Educational Reform Associate (New Era)	- Feasibility Study - Evaluative Studies
6. Integrated Development Systems (IDS)	- Feasibility Study - Evaluative Study
7. National Research Associates (NRA)	
8. Nepal Centre for Continuing Education (NCCE)	- Adult/continuing education
9. Project Study and Analysis Centre	- Project study/analysis
10. Agricultural Projects Service Centre (APROSC)	- Feasibility studies, Socio-economic Studies, appraisal of prepared projects.

Numerous action oriented research programmes are also being conducted by the Ministry of Education and Culture through its various divisions, sections and centres such as Planning and Evaluation Division, Statistical Section, School Administration Section, Adult Education Section, the Curriculum, Textbook and Supervision Development Centre (CTSDC), and the Science Education Development Centre, just name a few. The National Education Committee, the highest policy making and review body, also has its research section which studies and deliberates on various educational issues of national interest and prepares policy papers which have far-reaching impacts on educational innovation and reform.

Reforms

In the 1980s, many educational reforms were made at all levels of education. A summary of some of the major reforms is provided in Table 2. It should be noted that all these reforms were influenced by research of one kind or the other.

Table 2: Major Educational Reforms in Nepal 1981 Onward

Brief description of reform	Educational Level
Extension of primary education from Grade III to V	Primary
Inclusion of primary education in the Basic Needs Programme	Primary
Launching of nationally important significant innovative projects such as:	
(a) Primary Education Project	Primary

(b) Education for Rural Development Project in Seti Zone	Primary
(c) Science Education Development Project	Secondary
(d) 150 hour primary teacher training programme	Primary
(e) Women education programme	Secondary
(f) Literacy campaign as a part of universalization of education programme	
(g) School mapping Project	
(h) Radio Education Teacher Training Programme	
(i) Population Education	
(j) Skill oriented vocational and trade school programme	
Report of Royal Commission on Higher Education Reforms	Tertiary
Establishment of a Sanskrit University	Tertiary
Permission to operate private campuses	Tertiary
Approval of legislation for 10+2	Secondary
Special programmes for women (e.g. Cheli Beti)	Primary
Focus on trade schools for out-of-school youth	Secondary

Impacts

Although the contributions of these numerous research organizations on educational reforms in Nepal cannot be quantified, they have availed themselves to provide necessary data and information for making important decisions affecting the national system of education.

Research has made significant contributions in shaping the educational development in Nepal. Soon after the implementation of NESP the National Education Committee established Research Centre for Educational Innovation and Development (CERID, now under the Tribhuvan University). After the study conducted by CERID on effectiveness of primary education, the duration of primary education was extended to five years from three years. It was CERID which first conducted feasibility study of 10+2 structure for secondary education. 10+2 model is a part of national policy now. Likewise, feasibility studies and evaluative studies conducted by CERID and other research institutes have made valuable contributions in launching innovative projects. The launching of Education for Rural Development Project in Seti Zone was the consequence of CERID's experimental project in Lahachowk of Kaski district. These studies and evaluations have also helped to improve curricula, textbooks, educational materials and school supervision system in the country.

There is a need and much scope for educational research in Nepal. To meet the country's educational research needs, there is also a need for strengthening research institutes. These institutions lack adequately qualified manpower, financial resources and physical facilities to carry out their activities in an effective manner. There is the potential but much is needed to be for exploiting this potential.

There is also a case for utilising the limited research works that are available on the part of user agencies. The tendency to make hurried decisions without consulting appropriate documents or examining relevant data and information is more a rule than exception.

New Zealand

A. *Major Institutions Engaged in Educational Research and Types of Research Undertaken*

1. Research and Statistics Division, Ministry of Education

The Director, Research and Statistics, is responsible for the provision of research and statistical information to help in forming policy and for planning, evaluation and monitoring. The work of the division is carried out by the following sections:

1) *Research Section* - responsible for undertaking research work generally of a survey or evaluative nature, covering early childhood through to tertiary education, and including teacher education.

2) *Research Programme Section* - responsible for managing the ministry's contract research programme. This provides funding for research undertaken by universities, colleges of education and teachers, and also allows for research requirements to be met by commercial research organizations.

3) *International Association for the Evaluation of Educational Achievement (IEA) Section* - responsible for managing participation in international research projects under the auspices of the IEA.

4) *Statistics Section* - responsible for the provision of census information or other statistics required for educational planning and administration.

5) *Statistics Research Section* - responsible for statistical forecasts, demographic research and trends analysis to assist with planning.

Research of a developmental nature, for instance curriculum and resource development, is carried out in other divisions of the Ministry.

2. New Zealand Council for Educational Research (NZCER)

NZCER is a statutory body with national responsibilities and broad terms of reference. Funding is through Government Grant (about 85%), and through contract research.

The Council is directed by a nine member board (six elected by a widely representative electoral college), and four standing advisory committees guide the work of its four research programmes. The Council offers independent research based information and advice through these programmes - Families and Early Childhood, Students and Schools, and Vocational Education and Adult Learning (covering the three tiers of education) and Maori Language and Education (which covers all levels), as well as through sponsored

projects and its Information and Advisory Services. It also sustains an independent publications operation, and markets books, research reports, tests and classroom materials.

The Families and Early Childhood programme is concerned with issues affecting families, with a particular focus on children from birth to 8 years, and their educational experiences within the family, at pre-school, and during the early years of school and in the transition points between them.

The Students and Schools programme has a strong evaluative focus, with one component particularly concerned with test development and assessment issues, and the other with broader curriculum and evaluation matters, including studies in educational computing, research into written language, and curriculum research aimed at developing classroom materials.

The Vocational Education and Adult Learning programme is directed towards the development and evaluation of training programmes and courses in vocational education, the applications of technology to distance education, and longitudinal studies of students undertaking various forms of tertiary education.

The Maori Language and Education programme, Te Wahanga Maori, could be seen as a 'theme' cutting across the other levels and is concerned with identifying and researching major issues in Maori education, particularly those relating to the theory and practice of bilingual education and other aspects of Maori language, and preparing research-based materials for teachers and learners.

Special education forms another such theme, and the Council from time to time has projects, largely sponsored externally, which address this important area.

Three additional criteria for the Council's present work

are: equity; biculturalism, and through it, multiculturalism; technology; and all new projects are considered against these criteria to establish priorities for the activities of staff.

The national reputation and independence of the Council are also prime consideration in selecting projects for investigation, and all publishing and dissemination activities are closely connected with these priorities.

3. Universities

In faculties of education, and to a lesser extent in other social science faculties, in New Zealand, educational research projects are carried out by individuals or on a team basis. Funding for this research is obtained from the university itself, the Ministry of Education (through its contract research programme) or from other sources. A range of research methods is employed.

4. Colleges of Education

A research capacity is gradually developing in colleges of education (teachers training colleges), sometimes in collaboration with neighbouring universities faculties of education. In the main this research is related to teacher education or school curriculum.

5. Other

From time to time other organizations, such as the Society of Research on Women and the Association of Social Science Researchers, undertake educational research.

B. *Major Educational Reforms being undertaken and the Contribution of Educational Research*

1. Major Educational Reforms

A major educational reform officially took place on 1 October 1989 with the birth of the Ministry of Education and associated agencies. This reform came out of a need to develop a new administrative system of education which would place decision-making as close as possible to the point of implementation and at the same time be efficient and effective. Underpinnig these was the need to improve equity for girls and women, Maori, ethnic minorities and other groups. The Picot taskforce, given responsibility for this review and established in July 1987, released its report, *Administering for Excellence*, on 10 May 1988. Other committees were established to consider and report on changes for the early childhood and post-compulsory sectors of education, each producing a report and recommendations. These reports were respectively *Education to be More* (August 1988) and *Report of the Working Group on Post-Compulsory Education and Training* (July 1988).

Following each of these reports, the government called for a response from the general public and educationalists. This involved a series of inquiries throughout the country and thousands of submissions were received. These responses were considered by working parties and a series of reports produced, covering the administration of education from early childhood care and education to post-compulsory education and training. These included *Tomorrow's Schools* (August 1988), *Before Five* (December 1988), *Learning for Life* (February 1989) and *Learning for Life, Two* (August 1989).

Proposed under the Picot report was an education administration which had a flatter structure with reduced numbers, and which separated the policy and operations components of administration. The functions of the Ministry of Education and other agencies are:

1) *Ministry of Education* - To give policy advice to the Minister on all aspects of education from early childhood to tertiary and oversee the implementation of approved policies. The Ministry will also administer legislation, fund institutions, manage education property, develop national curriculum guidelines and objectives, and process charters.

2) *Education Review Office* - To regularly review schools and other learning institutions to see how effectively their charter objectives are being met.

3) *Special Education Service* - To provide advice, guidance and some specialised teaching services to assist those learners from early childhood to tertiary who have special developmental or learning needs.

4) *Early Childhood Development Unit* - To provide liaison and co-ordination for all early childhood services. The Unit will provide in-service training and education across all areas of early childhood and give support and advice to families, services, groups and communities.

5) *Parent Advocacy Council* - To promote the interests of parents.

6) *Education Service Centres* - To provide support to schools regarding finance, property, supplies and personnel, in competition with other such businesses.

7) *Teacher Registration Board* - An independent body which will approve the registration of teachers and maintain a register.

8) *Board of Trustees* - Each institution has a board responsible for the broad policy objectives and efficient and effective running of the school.

9) *National Education Qualifications Authority* - To co-ordinate national secondary school educational qualifications, national vocational qualifications and national advanced academic qualifications, with an emphasis on establishing links between sectors.

10) *Education and Training Support Agency* - To administer and service the ACCESS and apprenticeship systems.

Other reforms in the education sector are also taking place, including reform of a developmental or on-going nature. However, these reforms are dwarfed in comparison to the reform of the administration of education.

2. Contributions of Educational Research to Reforms

Administering for Excellence - Research on the proposed new structure was not an integral feature of this report. However there were references to research which supported some of the ideas in the formulation of the new education administrative structure, and reforms being carried out in other education systems were studied. Extensive information collation was carried out by members of the taskforce, as supporting evidence for change.

Tomorrow's Schools - This report concentrated mainly upon changes to primary and secondary schools. Changes referred to in the report include the responsibility institutions have for control over their own educational resources, the partnership between the community and the professionals in the schools through the Board of Trustees, the need for schools to be accountable to the Education Review Authority, the establishment of community education forums to debate and voice concerns, and the creation of a Parent

Advocacy Council to promote the interests of parents.

The proposals for changes outlined in this report did receive some criticism for an apparent lack of research basis. However, research carried out over previous years in the previous system revealed inadequacies and the proposals developed were to overcome these.

Several research projects have commenced which have regard to changes being made. Research commenced in 1988 and to be completed in 1990 (*Curriculum Review Research in Schools* - Peter Ramsay), includes aspects which will be valuable in the implementation of *Tomorrow's Schools*. This includes the development of guidelines for the process of consultation with parents so that schools and their communities can work together towards a supportive partnership. A second project and a major one, has been initiated to research aspects of *Tomorrow's Schools* (*Monitoring Today's Schools* - David Mitchell). The objective of this research is to monitor over three years, the impact on schools of changes introduced by the Picot Report and *Tomorrow's Schools*. Both of these projects are being undertaken in universities under contract to the Ministry of Education.

NZCER is also currently undertaking a research project relevant to changes - *The Effects of Tomorrow's Schools on Resources Information in Primary and Intermediate Schools*, and further proposals are currently being considered under the research programme of the research programme of the Research and Statistics Division (Ministry of Education), looking at aspects of the implementation of *Tomorrow's Schools* (*School and Community Collaboration* - Dr. V. Robinson and Dr. S. McNaughton).

Education to be More - References to research on changes proposed to the early childhood education area were sparse. However a number of research projects were referenced with regard to the benefits of early childhood care and education.

Before Five - The most profound change to the early childhood sector was it being put on equal status with other education sectors, and the setting up of the Early Childhood Development Unit to provide liaison, coordination, support and training for early childhood services.

Although there is no requirement to establish boards of trustees (as for other institutions), to obtain Vote: Education funding, early childhood services must have a charter drawn up in consultation with parents/whanau.

Proposals are being considered for research under the research programme of the Research and Statistics Division (Ministry of Education) with reference to changes being implemented with regard to early childhood education (*Before Five*, Margery Renwick).

Report on the Working Group on Post-Compulsory Education and Training - Again, research on specified changes was sparse. However changes recommended were a result of bringing together various reviews that had been undertaken on the individual sectors, and consistent with changes in other areas of education and administration.

Learning for Life/Learning for Life, Two - These reports covered

changes to post-compulsory education and training, that is beyond the age of 15 years. Changes integrate the various sectors of post-compulsory education and rationalise qualifications.

Post-compulsory education reform is not at such an advanced stage in its reform as other sectors of education administration. Consequently relevant research proposals have not yet been received.

In summary, the evidence is that educational research has had only a minor role in influencing the reform of the education administrative system. The reform process adopted was largely one of consultation, and based on a collation of information and ideas. However, research is having some role in the monitoring and evaluation of aspects of the reform.

Pakistan

Research is conceived to be the best process of arriving at dependable solutions to problems through the planned and systematic collection, analysis and interpretation of data.

The term research itself may take on a range of meanings and there by legitimately applied to a variety of contexts. The term educational research means the application of the self-same principles to the problems of teaching and learning within the formal educational framework and to the clarification of issues having direct or indirect bearing on these concepts.

Pakistan is one of the developing countries of the world. It came into existence in 1947. Immediately after its existence, an Education Conference was held at Karachi in November-December 1947. As a result of the proceedings of this conference, an Advisory Board of Education was appointed in 1951.

The first formal exercise in curriculum development was undertaken as a result of the report of the Commission on National Education in 1959. In the mid sixties, the new concept of integrated and modernized science courses was introduced. This concept was later on carried out into other subject-areas along with science subjects. From then onwards, various policies, conferences, seminars, workshops and committees have been established to review/revise the various subject-areas in the field of education. In fact, this is the report of the Commission on National Education which laid more emphasis on research in general and educational research in particular. Since 1960, and onward, the educational research began in the country.

A. *Major Institutions Engaged in Educational Research and Types of Research Undertaken by Them.*

At present, educational research in Pakistan is carried out into four main areas:

1) curriculum development;
2) training of teachers;
3) training of educational administrators; and
4) material production.

The major institutions and the types of research taken by them are as under:

1. Curriculum Wing, Ministry of Education

The existing curriculum wing, Ministry of Education, is in fact a developed form of the National Bureau of Curriculum and Textbooks (N.B.C.T). The main functions of this wing in respect of educational research are:

a) To conduct research on different aspects of curriculum for classes I - XII and to publish curriculum bulletins and handbooks.

b) To collect information and data of other countries on curriculum-development and textbook production for research and dissemination among the provincial agencies.

This wing of the Ministry of Education has conducted/sponsored 70 studies so far, for the evaluation of curricula of various subjects and 11 studies are in progress. These research studies have been mainly carried out in the following areas:

a) curriculum evaluation;
b) curriculum development;
c) achievement testing; and
d) teacher education.

2. Curriculum Research and Development Centre, Lahore

This Centre was established in 1968 as an integral part of the Provincial Education Department. Apart from other educational activities, the Centre conducts the research of applied nature periodically. The projects like Competency-based Teacher Education, and Multi-grade Teaching are in progress.

3. Education Extension Centre Punjab, Lahore

This Centre was established in 1959. It was established as the integral part of the Provincial Education Department. This Centre has mainly carried out survey types of research.

4. Bureau of Curriculum Development and Education Extension Services, N.W.F.P., Abbotabad

This Bureau was established in 1970 as subordinate office of N.W.F.P. Provincial Education Directorate (schools). Apart from other educational activities, this bureau carried out educational research. Problems are usually selected with the help of working teachers. Such problems are invariably selected to the teacher training and curriculum at school level.

5. Centre of Excellence in Psychology, Qaid-e-Azam University, Islamabad.

This Centre was established as National Institute of Psychology. This carries out its research activities in guidance and counselling, and cognitive development.

6. Institute of Education and Research, University of the Punjab, Lahore.

This Institute of was established in 1960 as a semi-autonomous organization in Punjab University, Lahore. The Institute has so for developed some semi-standardized tests. Problem-oriented research is being conducted by the MEd/MA and PhD students.

7. The Institute of Education and Research, Peshawar University, Peshawar

This Institute was established as Department of Education in 1950, and then was given the status of College of Education in 1964 and of IER in 1980. This Institute carries out research in various aspects of teacher education.

8. Faculty of Education, University of Sindh

This Faculty was started as Department of Education in 1951. Its status was raised to as Institute of Education and Research in 1964 and then to the Faculty of Education in 1978. A full-fledged Department of Research was established in the Faculty in 1987. This Faculty is having four Departments. All are engaged in research of various problems of teacher education.

9. The Institute of Education and Research, Gomal University, Dara Ismail Khan

This Institute was first of all, established as department of Education in 1974. It was given the status of I.E.R.in 1977. Individual research projects are taken by the students on various problems of education.

10. Faculty of Education, Allama Iqbal Open University, Islamabad

First of all, Institute of Education and Research was established which was then raised to the status of Faculty of Education. This Faculty, at present, has departments. The research is being carried out mostly in all the departments of Faculty on various problems of education.

11. Academy of Educational Planning and Management

Basically this academy was established for training the Educational planners and administrators. This academy started doing research also. The main areas of research, dealt by the academy, are the problems of school administration, educational planning and field researchers.

12. Departments of Education

Bahauddin Zakariya, University, Multan
Baluchistan University, Quetta and Karachi University, Karachi.

There are Departments of Education in these Universities. Here most of the researches are being done at Master's degree level. Many useful studies have been conducted in the various fields of Education. PhD. students also do research in these departments on various Educational Problems.

13. College of Education

Apart from Faculties of Education, I.E.Rs and Departments of Education,

there are few Colleges of Education which are engaged in teacher training. The research carried out in these colleges is pertaining to the field of evaluation, testing, survey and self-learning/instructional materials.

14. Boards of Intermediate and Secondary Education

In the light of the recommendations of the Report of the Commission on National Education, the Boards of Intermediate and Secondary Education were established throughout the country at divisional level. At present 12 such Boards are working in the country. These Boards are also busy in doing research.

The main field of research of these Boards are: examination system, testing and evaluation. For these purposes, they have established the Directorates of research in the Boards.

15. National Education Equipment Centre, Lahore

The National Education Equipment Centre (NEEC) was established in 1969 as a semi-autonomous organization. The Centre develops and produces scientific educational material, for school of all levels and colleges. The research is carried out to prepare indigenous material, and the teaching kits are prepared and supplied in primary schools. The equipment is developed and produced on the research done by the Centre.

B. Major Educational Reform Actions being Undertaken and Contributions of Educational Research

Educational research is being carried out in various institutions on various problems and in different areas/fields. The progress in the fields of educational research began after 1960.

Up to this time, major educational reform actions have been undertaken. These are actually the contributions of educational research. Some of major educational reforms undertaken are as under:

1) Development of curricula for intermediate classes on the basis of pre-evaluation of draft curricula;

2) Development of instructional modules at various levels;

3) Development of achievement tests in various subject at various levels;

4) Development of test-item banks in various subject for secondary classes; and

5) Development of various textbooks for various subjects at different levels.

Apart from these, the following major projects are also undertaken:

1. World Bank Assistance,Third Education Project for Primary Education

The core of the project is integration of curricula. To achieve the success, the school buildings, equipment, teacher education, system of supervision, and system of evaluation are being improved.

2. Secondary Education Curriculum Reform Project

The project is being tried in various districts of the country. The central issue is to frame curricula, textbook, and instructional material, based on local needs and environment.

3. Science Education Project

This is an Asian Development Bank assistance project. It aims improving science education at secondary level by developing research-based science curricula, textbooks, teachers' guides, learning packages, and modules for middle and secondary science schools and science teachers and others.

Impact of Educational Research on Major Educational Reforms

Due to conducting educational research in different areas and at different levels, the great impact has taken place in the following reforms:

1) curriculum development;

2) development of instructional modules at various levels in science subjects;

3) development of textbooks for various subjects at different levels;

4) expansion and development of primary education.

5) expansion and development of science education at secondary level; and

6) expansion in provision of facilities is secondary schools.

In the following areas, the research has produced some impact on the reforms:

1) development and standardization of achievement tests in various subjects and at various levels;

2) development of test-item banks in various science subjects at secondary level;

3) technical and vocational education;

4) in-service training of teachers; and

5) higher education.

Conclusion

Educational research in Pakistan is being carried out in various institutions and at various levels. The areas where research is done, are; curriculum studies, psychological studies, evaluation, testing, learning/concept formation, guidance and counselling, cognitive development, instructional material, and teacher education.

Due to research activities in the country, various educational reform actions have been undertaken or to be undertaken in near future. These, in fact, are due to the contributions made by the educational research done in the country. The future of educational research in science is very bright and promising. The present government is also boosting the research programmes in the country and so it is hoped that due to such programmes, country will progress and prosper not only in education, it will develop economically also in future.

Papua New Guinea

A. Educational Research Institutions

There are main institutions undertaking educational research in Papua New Guinea (PNG). The first of these is the Research and Evaluation Unit (REU) which is a branch of the National Department or Education (NDOE). This unit focuses its activities on carrying out "action research" and the evaluation of new investment projects for the NDOE. The second is the Education Faculty of the University of Papua New Guinea (UPNG). Through the Education Research and Publication Committee, the faculty staff conducts educational research as part of their duties as academic staff of the university. The third institution is the Education Division of the National Research Institute (NRI), which is an semi-independent organization, carries out educational research especially for the provinces.

Research and Evaluation Unit (REU)

The Research and Evaluation Unit was originally set up primarily to evaluate World Bank Projects in 1981. However, the number of positions in the unit were increased later to cater for the evaluation of the Technical Education Project which was funded by the Asian Development Bank. In 1984, the Evaluation Unit was further expanded to include the already existing research branch of the department. THe REU is organized into three levels, with a director responsible for overall administration and supervision, senior officers to design research and evaluation studies and field officers to collect data and report findings. Staffing is a problem at the moment with only the director, three field officers and two support staff. The responsibilities of the unit now include co-ordinating a range of research and evaluation studies, both within and outside the NDOE.

The REU carries out research and evaluation activities requested by the NDOE and the Provincial Divisions of Education. The unit fulfils its role by identifying needs and priorities, conducting studies, reporting results and monitoring external studies approved by the Secretary of Education.

A Research and Evaluation Committee (REC) is responsible for the monitoring and overseeing the REU. The committee's functions focus on reviewing evaluation and research activities, setting evaluation and research priorities, discussing evaluation and research issues, and identifying ways of improving the provision and utilization of research and evaluation information.

National Research Institute

The National Research Institute (NRI) was established in 1989 when the government directed that three previous research bodies, namely, the Education Research Unit of the UPNG, Institute of Applied Social and Economic Research, and the Institute of Papua New Guinea Studies be amalgamated into a

single research institution. One of the main reasons why NRI was set up was to ensure research activities for a better co-ordination.

The Education Division of the NRI is responsible for carrying out educational research for any agency within and outside the government system. However, NRI has been of most benefit to provinces who lack the professional staff to design studies to answer major policy questions. More recently, division has assisted the NDOE in carrying out a number of major studies. This division is mainly staffed by former members of the university and therefore their activities have academic orientation to research.

University of Papua New Guinea

The Education and Publication Committee (ERPC) is responsible for monitoring educational research conducted by the Faculty of Education at UPNG. The ERPC, apart from having representatives from the Faculty of Education, also invites representatives from the NDOE and NRI and they have full powers of voting. One of the functions of the ERPC is arranging forums where research findings are discussed. In summary, the ERPC is the faculty research service committee.

Most of the research is done for either academic purposes or for post graduate studies. UPNG staff members who want to carry out research activities are required to forward their research proposals to ERPC who upon approval forward them to the University Research and Publication Committee which is the highest authority apart from the vice-chancellor for approval if funding is required.

B. Types of Research Undertaken

Although these three institutions have undertaken research on many different aspects of education, most of these can be categorized under four main headings:

- Educational Administration;
- Staff Development;
- Curriculum Development, and
- Teacher Education.

1. Educational Administration

Recently the REU co-ordinated a number of researchers, both within and outside of the country, whose studies focused on educational administration. One of these studies looked at administrative linkages between the NDOE and the PDOE while other studies by UPNG investigated the co-ordination and policy making in higher education as well as priorities and goals of the two universities. NRI also carried out a major study which examined educational planning in PNG in the past decade. This study focused on the problems and constraints encountered in the development of provincial education planning since 1978, particularly in the East New Britain Province.

2. Staff Development

Research conducted in this area has ranged from REU studies which addressed issues on teacher in-service opportunities that are available to secondary education teachers in the high schools to; studies which looked at participation in decision-making in a tertiary institution and factors which promote or hinder learning in adult learners. A more recent study by an UPNG academic specifically looked at provincially organized in-service activities.

3. Curriculum Development

Studies conducted this area have again varied widely. The REU approved study addressed the use and impact of the new materials coming out of the Curriculum Development Unit the NDOE especially the Community Life Syllabus while studies by UPNG looked at the political education of adolescents in PNG. This study specifically focused on determining the amount of political knowledge, skills and literacy of Grade 10 students. In addition, numerous studies have been carried out on various syllabi at all levels of education. Some of these studies looked at curriculum in both science and mathematics.

4. Teacher Education

This area has been main focus of REU research activities for the past two years. The main study is now known as the Teacher Education Research Project (TERP). The main aim of TERP was to determine the most cost-effective strategy to improve the quality of teacher education at the primary level. In conjunction with the Teacher Education Division, REU identified three major studies or units of research to be undertaken. These are:

- Unit 1: The problems of Beginning Teachers;
- Unit 2: The Structure and Impact of the Basic Skills Course and Examination; and
- Unit 3: The Characteristics and Problems of Practice Teaching.

In addition to the above, research papers were also completed on:

- Why Choose Teaching? Career Aspirations of Teachers;
- College Ratings and Postings of 1987 Graduates; and
- Comments on Teacher Education by Teacher Educators.

The problems identified and the recommendations made in each of the studies were then critically reviewed by a Task Force appointed by the Secretary for Education. The Task Force was given the responsibility of achieving the ultimate objective of the research: to determine, using the information and recommendations of each of the studies, the most cost-effective strategy to improve teacher education. The Task Force Report became known as the Unit 4 study: *Future Direction of the Community Teacher Education Programme.*

C. The Contribution of Educational Research to Major Educational Reforms

A major educational reform currently in PNG as the result of educational research activity is in the teacher education area.

Since independence in 1975, concerns have been raised about the decline in the standards of education in the country. A number of areas were identified as factors contributing to the decline in standards. One of these were the poor quality of teachers in the primary level.

In hope of developing appropriate strategies to address the problem of poor quality teachers, the TERP was implemented as described above. The study looked at a number of different aspects of teacher education and the main findings of this study were recently published in a report entitled *The Future Directions for the Primary Teacher Education Programme.* TERP has identified several key issues related to the quality of teaching observed in student teachers, beginning teachers, and more experienced Community School teachers and issues which have implications for the quality of teacher education provided at colleges. Among these are the relatively low quality of college entrants, low morale among teachers, and teaching behaviour based on formalized lesson planning rather than on the application of learning processes to individual student's needs.

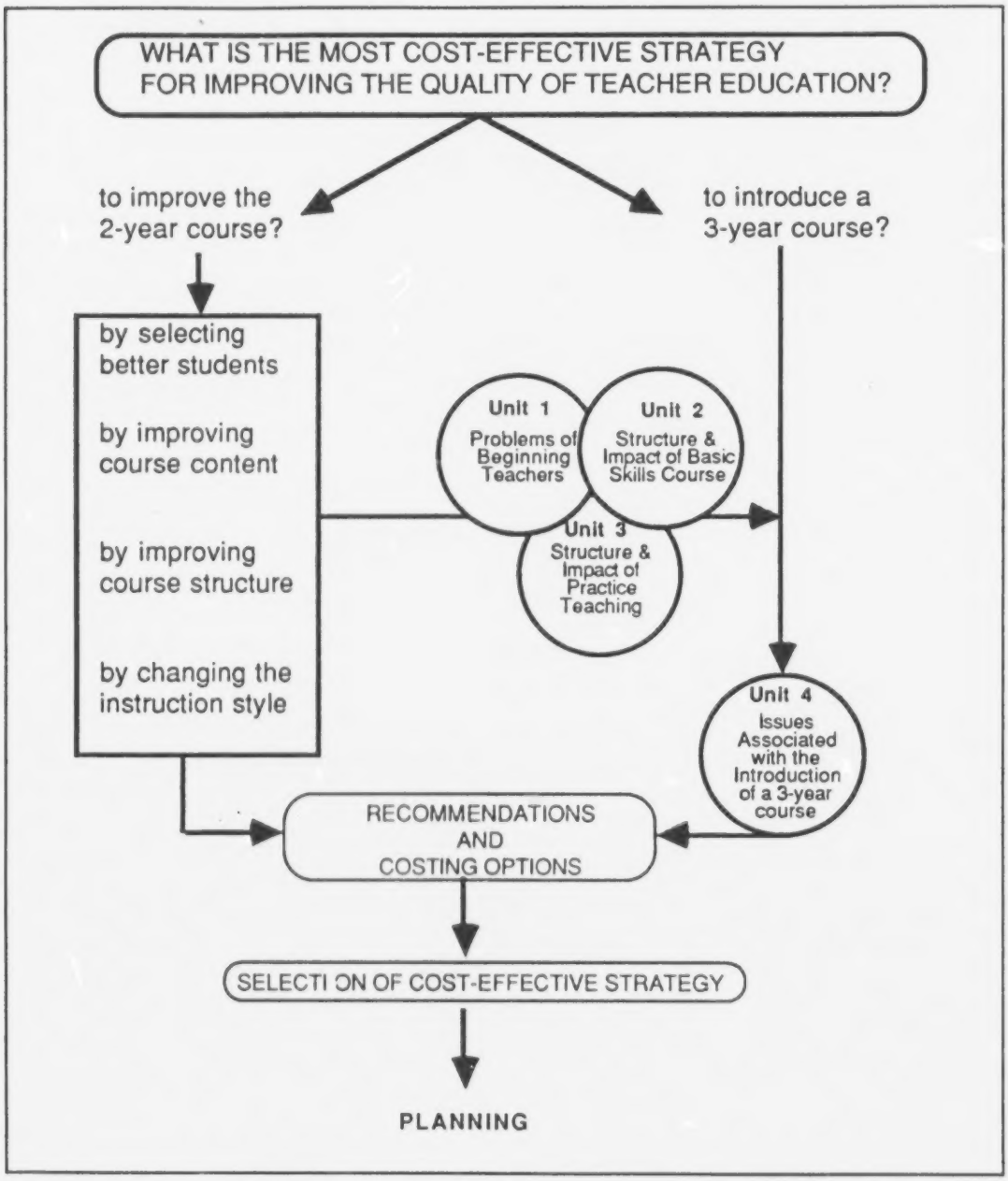
TERP has led to clear directions for quality improvement being presented to the NDOE. The impact of TERP has resulted in major reforms in education in PNG focusing on a (1) three year teacher training programme, and (2) development of a National Institute of Teacher Education (NITE). The three year programme will extend the present two year programme to ensure teachers coming out of the colleges are better prepared. The setting up of NITE within the University of Papua New Guinea is aimed at providing advice to teachers colleges on the most cost-effective means of improving the status of the teaching profession and providing professional support to colleges. (See Chart)

Usefulness of TERP Approach

The TERP approach has provided a useful model for research. The research approach used allows for an examination of a series of problems from many different perspectives. The advantage of such an approach is that it provides for collaborative and research and regular feedback to decision-makers. It included, as a component, a Steering Committee which monitored progress. As part and parcel of the research design, the Task Force was included to review research findings and recommendations was done prior to decision makers taking action. This step was included to avoid the problem of research reports lying on shelves collecting dust as it happens so often. The Task Force included members of various clients affected by policy changes, so that the findings and recommendations would be viewed more favourably.

A vital aspect of this approach has meant that regular feedback from the project enabling the Department to make adjustments to policy and its implementation. A clear example of the reforms undertaken as the results of research was, when the TERP study reported that a low academic level of college entrants was evident, National Education Board entry criteria was

revised and raised.


WHAT IS THE MOST COST-EFFECTIVE STRATEGY FOR IMPROVING THE QUALITY OF TEACHER EDUCATION?
to improve the 2-year course?
to introduce a 3-year course?
by selecting better students
by improving course content
by improving course structure
by changing the instruction style
Unit 1 Problems of Beginning Teachers
Unit 2 Structure & Impact of Basic Skills Course
Unit 3 Structure & Impact of Practice Teaching
Unit 4 Issues Associated with the Introduction of a 3-year course
RECOMMENDATIONS AND COSTING OPTIONS
SELECTION OF COST-EFFECTIVE STRATEGY
PLANNING

D. Suggestions for Educational Reforms and Research for the Future

In PNG, like many other countries, decision makers are now becoming more and more aware of the quality of the decisions they make from research findings. Research is seen as a major source of information and ideas from

which education policies can be revised and strengthened.

The problem in PNG was, in the past, due to lack of co-ordination and monitoring of research activities that were carried out by different research institutions, findings were often rarely made available or in some cases research conducted were poorly done. In an attempt to ensure that educational research findings are made more readily available and to maintain a high standards of research a number of vital changes are now taking place with the three research institutions.

A major initiative undertaken by the NDOE is development of a policy on the authorization of research in Educational Institutions. The overall aims of this policy is to ensure that:

- the quality of educational research is maintained;
- research activities are better co-ordinated; and
- information from research studies are more readily available.

The policy specifically states that researchers intending to carry out research in educational institutions must submit detail research proposals to the REC. The proposals are to be presented on the guidelines prescribed by the REU. However, other research institutions such as UPNG and NRI are allowed to conduct research with no formal approval from the REC, if the NDOE is not required to fund the research or provide technical assistance. With the UPNG and NRI now developing their own research polices, the quality of research will be maintained and research activities can be monitored more effectively.

An important consideration for educational research institutions is whether, and if so how far, research findings seep into and are able to influence educational policy-making and practise in the country. It is true that research documents are made available, however, especially in a developing country, most people who are to use the findings do not read them. Therefore, if the work of research institutions are to have a greater impact on future education trends, then the institutions need to pay greater attention to the problems posed in the area of dissemination.

The following are some of the suggestions that need to be considered by researchers in the country:

- building in a dissemination component at the initial stages of the research project (TERP approach).

- ensuring that there is continuous dialogue between the researcher and the research audience.

- dissemination of research findings through seminars arranged with key groups.

- production of more popular versions of research findings with suggested policy implications more clearly indicated.

In summary, educational research activities are undertaken to have an

impact on education. To ensure that research findings are utilized in the end, responsible research institutions must seriously consider, not only the amount or the quality of research work they undertake, but also to the dissemination of their research findings.

Philippines

Introduction

All through the ages, men have tried to solve the problems of society through the scientific method. In the field of education, research can be a good resource in the development of the educational system, particularly if it makes an impact on the policy makers and educational practitioners, more specifically those who make decisions which affect the day-to-day practice.

The development of educational research in the Philippines dates as far back to the mid 1940's when the country started to recover from the ravages wrought by world war II. This development, however, accelerated at a remarkable pace only in 1972, in response to the mounting demands on education.

Agencies Involved in Research

In the Philippines, educational researches are undertaken by the following government and non-government agencies/institutions:

1. Government Institutions

    1.1 Department of Education, Culture and Sports (DECS) and its attached agencies.
    1.2 Institute for Science and Mathematics Education Development (ISMED), University of the Philippines.

2. Colleges and Universities

    Through the Departments of Educational Research and Graduate Studies.

3. Non-government Agencies

    3.1 Summer Institute of Linguistics (SIL)
    3.2 Fund for Assistance to Private Education (FAPE)
    3.3 Regional Center for Educational Innovation and Technology (INNOTECH)

4. Professional Associations

    4.1 Philippine Association of Graduate Education (PAGE)
    4.2 Philippine Society for Curriculum Development (PSCD)
    4.3 Linguistics Society of the Philippines (LSP)
    4.4 Notre Dame Educational Association (NDEA)

The DECS conducts researches primarily to provide empirical inputs in the formulation of educational plans and policies as well as to provide decision makers with data which will aid them in making decisions pertinent to educational problems. Educational researches are likewise undertaken to

provide answers to problems relative to school operations; to assess the implementation of educational programs; to evaluate educational practices and materials; and to store information about the educational enterprise. Furthermore, researches are conducted to pave the way for educational innovations and to provide inputs in the development of instructional tools and materials that would suit the needs of the Filipinos as well as provide directions for educational programs and activities.

The colleges and universities are rich sources of educational researches in the Philippines. These researches are conducted either by members of the faculty or by graduate students. Faculty do research for their professional development and to realize the research function of the institutions whereas graduate students conduct research to meet degree requirements.

There is however a dearth of faculty-undertaken researches in the Philippines. This is mainly due to lack of logistical support. Even in state-subsidized colleges and universities, researches undertaken by faculty members are few and far between because of financial constraints. In fact, a study conducted by a Task Force created by the Department of Budget and Management to rationalize expenditure for state higher education in 1987 showed that only around 10% of the cost of operating expenses of government-managed and administered colleges and universities is allocated for research purposes.

Study on Educational Researches

At present there are 256 graduate schools of education in the country. The increase in the number of graduate schools has correspondingly increased the number of educational researches produced by graduate students to fulfill the requirements for the graduate education programs. It has been observed however that very little is known about the nature and quality of these researches due to poor dissemination of those research outputs. Likewise, it has been observed that there is lack of information on the utilization of the products of researches. It has been noted that theses/dissertations are relegated to dusty bookshelves after the candidates' oral examinations.

These observations have prodded the Committee for Educational Research Development (CERD) of the Program for Decentralized Educational Development (PRODED) to conduct an in-depth review of the state of educational research in the Philippines. This study revealed the following: there is no central clearing house for educational research in the Philippines, resulting in a very unsystematic and quite fragmentary dissemination of research information; educational research efforts are concentrated in the cities and in elite institutions whose funds are available; a number of research studies undertaken have not been translated into layman's terms for the benefit of end-users; and there is no national network through which individual researchers and research groups can communicate their research efforts.

These findings of the CERD impelled PRODED to commission the Philippine Association of Graduate Education (PAGE) to study the state-of-the-art of

educational research in the Philippines. The main purpose of the study was to look into what has been done, what could be done and what still needs to be done in the field of educational research in the Philippines.

In this particular study, the PAGE reviewed some 6000 theses and dissertations completed over a span of ten years, from 1973 to 1983, in the following content areas: (1) Teacher Education, (2) Educational Testing, Evaluation and Measurement, (3) Instructional System Development, (4) Educational Policy and Program Evaluation, (5) Management and Supervision, (6) Language, (7) The Filipino Child, (8) Educational Anthropology, and (9) Instructional Product Development.

In the area of teacher education, some of the significant findings of the review were the following: most of the researches conducted were on the in-service rather than pre-service levels over a broad range of topics; there was a dearth of researches on the conceptual framework of teacher education and on innovative proposals for teacher education programs, such as studies of micro-teaching, interaction analysis, simulation and product analysis as well as of studies on delivery particularly on incentives, interface and staff; and that some subjects were over-searched while other were under- or barely researched.

With regard to educational testing, measurement and evaluation, the results of the study revealed that around 50% of the theses and dissertations reviewed were in language, Mathematics, Science and Social Science and the remaining 50 percent were in other subject areas. As to levels, researches on languages predominated at the elementary level (42.7%). Only around two-fifths of the total research outputs were at the high school level, while less than a fifth were identified at the tertiary level. This trend holds true for Mathematics and Social Studies but is reversed for science with the highest number of researches at the secondary level.

On the review made of researches on educational policy and program evaluation, the findings showed that most studies were focused on the evaluation of educational programs rather than on educational policies. Studies on educational policies were mainly concerned with reflecting what the actors in an educational activity have to say or how they react to the implementation of certain educational policies. No one has ever discussed the process of policy-making nor policy justification. A few, however, have attempted to make a critical analysis of policy goals and of influences on policy-making. In addition, more researches were made on formal education program evaluation than on non-formal education program evaluation, Studies on topics that can contribute to theory building and shed light on practice are minimal. As a whole, studies on program evaluation predominated in the area of educational policy and program evaluation.

In the area of management and supervision, the majority the researches undertaken on management and supervision were on the following topics: (1) School Personnel, (2) Administrative Control and Organization, (3) Qualification and Competence, and (4) Curriculum and Instruction. Very few researches on Physical Facilities, History and Development of Education, School Finance, Parents and Community Linkages and Special Services, however, were undertaken.

Most of the researches, as revealed in the review of educational researches which were language-oriented, were on Bilingual Education, Child Language, Experimental Studies, Listening, Mass Media, Materials Development, Reading, Speaking, Teaching English, and Writing and Compositions. In view of these findings, it was recommended that studies which will show the effectiveness of the approaches, methods, procedures, techniques and devices for the learning of language in school setting need to be undertaken. Studies on the teaching and use of English and Pilipino as media of instructions may also be carried out.

There are very few researches made on the Filipino Child. Most of these were centered on problem identification, both on the psycho-social aspect of development and on learning problems and difficulties. However, very little work has been made on finding solutions to identified problems. No researches were conducted on the teaching-learning process and the resulting changes it makes on the learners and teachers. Although recent trends show that researches are shifting towards this direction, the characteristics of the learner and the correlates of achievements still continue to be the foci of most research efforts. These were the findings of the review and analysis made of researches made on the Filipino Child.

The analysis made on the development of instructional materials revealed that 86 percent of print and non-print materials were developed for the use of students and only 14 percent were for teachers' use. It was likewise observed that most of the researches were on instructional materials developed for the use of elementary and secondary education and only around 14 percent of the materials developed were intended for tertiary education, and about 3 percent were for non-formal and pre-elementary education.

In terms of type of materials, the study showed that most of the materials developed included self-learning kits, modules and supplementary readers, lessons, manuals, handbooks, tests, apparatus, devices and equipment. More than one-third (1/3) of the researches made on Instructional Development of Materials (IMD) were in Communication Arts.

IMD related researches in the area of Values Education/Character Education, Social Studies and Health Education were very minimal.

The future of educational research in the Philippines is brighter with the completion of the study on the State-of-the-Art of Educational Research: the Philippine Experience, because this study has identified the areas which are over-and under-researched as well as those which have not been researched on.

The suggested reforms of the study will indeed provide the directions for future researches in education especially in the nine content areas.

Major Educational Reform Actions Taken

To respond to the changing needs for education, the following major reforms in the Philippine Educational System were institutionalized:

1. Reorganization of the Department of Education, Culture and sports (DECS)

This reform was instituted to provide for an integrated system of education upon recommendation of the Philippine Commission to Study Philippine Education (PCSPE). This Commission was an independent ad hoc body to look into the educational system in its entirety.

2. Decentralization of Education

This was effected to decentralize the administration and supervision of schools in all levels. In addition to the existing provincial/city schools divisions, 14 regional offices were created.

3. Restructuring of the Elementary and Secondary Education Programmes

This was effected to provide for a more functional basic education programme suitable to the indigenous needs and learning capabilities of Filipino children and youth.

4. Free Secondary Education

This is the recent reform instituted only effective school year 1989-1990. However, due to financial constraints, only students enrolled in government schools benefited from this reform. Students in private schools continue to pay for their education at this level.

5. "Service Contracting" Scheme

This scheme applies to students who could not be admitted in government secondary schools. They are placed in private schools which are contracted by government to provide them secondary education.

6. Revision of Higher Education Curricula

Some higher education curricula, e.g. teacher training, nursing, were revised to provide the labour market with high level manpower equipped with the required knowledge and skills.

7. Selective Admission to Medical College

A national test, National Medical Admission Test (NMAT) is administered to identify students who possess the mental ability as well as the aptitude for the medical course.

8. Government Assistance to Students in Private Schools

Assistance is in the form of assistance to 5% of first year college students who are provided subsidy up to 90% of the cost of education. For students beyond first year, the government provides educational subsidy by paying for any increase in tuition fees in schools charging not more than eighty pesos per unit.

9. Accreditation and Unregulation

Schools which have attained quality are exempted from complying with governmental requirements. Schools are assessed by recognized accrediting agencies.

10. Technical Panels for Higher Education

Technical panels are ad hoc bodies created by virtue of the Education Act of 1982. They are expected to provide expert and technical advice to the Department of Education, Culture and Sports on matters pertinent to their areas of specialization.

The institutionalization of educational reforms in the Philippine educational system was to a greater extent influenced by results of educational researches undertaken. This is because policy makers and decision makers in the education sector have accepted that educational research is an important tool in instituting reforms as well as in measuring the effectiveness of such reforms.

Republic of Korea

A. Major Educational Research Institutes

1. The National Institute of Educational Evaluation (NIEE)

The National Institute of Educational Evaluation was established on 12 August 1985 under the Ministry of Education to contribute to the development of national educational system. The Institute is an organization exclusively in charge of educational evaluation at the national level.

The Institute was established to achieve the following goals:

- to enhance public confidence in educational evaluation by managing and improving various type of national-level examinations;
- to contribute to the improvement of the quality of education by conducting national evaluation of educational achievement at various level and by providing basic data for educational policy-making; and
- to perform systematic researches on educational evaluation and to assist the educational evaluation activities of schools and other educational institutes.

The organization of National Institute of Educational Evaluation consists of three departments, 12 divisions, with 90 employees. The departments are Evaluation Planning Department, Test Item Development Department, and Examination Administration Department.

The major functions of the Institute are management of various types of national-level examinations; national evaluation of students' academic achievement in primary and secondary schools; research on methods of evaluation in education; support of evaluation activities conducted by individual schools and other educational organizations; and compilation and analysis of various types of statistical data and materials on education.

The Institute carried out the following activities in recent years:

- the management of examinations such as the national examination for college entrance with the target population of over 1,000,000 students, selective examination for high school entrance, examination of Korean government overseas scholarship grantees, foreign language examination for studying abroad, and examination for specialized technical personnel; and
- the national evaluation of students' achievement and preparation for the establishment of test item bank in primary and secondary schools;
- researches related to educational evaluation in fifteen areas such as the study on the development of standardized test, international com-

parative study on the scholastic achievement of middle school students, the evaluation of affective characteristics, and the improving the high school and college entrance examination system; and

- holding the National Educational Evaluation Seminar as part of support activities for educational evaluation, training educational evaluation specialists, and publishing Statistical Yearbook of Education.

2. The Korean Educational Development Institute (KEDI)

The Korean Educational Development Institute is an independent, autonomous and government-funded educational research and development organization established to carry out the following activities:

- to undertake comprehensive and systematic research and development activities on educational goals, contents and methodology;
- to assist the government in formulating its educational policies and in effecting long-term development of education;
- to produce educational TV/Radio programs and improve the effectiveness of the teaching and the learning process by fully exploring the potential advantages of broadcasting media in the educational process;
- to undertake in-depth R/D activities in computer education for all school levels;
- to publish and disseminate significant findings of educational research and to provide information service to those engaged in R/D activities and policy formation; and
- to promote cross-cultural exchange of innovative experiences in the field of education.

The organization of KEDI is divided into two part: educational research and educational broadcasting, with 450 employees. Educational research part consists of five departments, 34 units, and five bureaus and 15 units for educational broadcasting. The departments for educational research are Curriculum Research and Development Department, Educational Foundations and Policy Research Department, Educational Information Management Department, Computer Education Research Center, and Air and Correspondence High School Bureau.

The Curriculum Research and Development Department conducts various research and development activities aimed at upgrading the quality of education for the primary and secondary school levels. More specifically, the department carries out following activities:

- in-depth research into areas related to school curriculum and instruction;
- development of curricula for the primary and secondary school levels including all subject matters;

- development and implementation of instructional materials including student textbooks, teachers' guides and manuals; and

- development of various types of supplementary teaching-learning materials.

The department also engages in conducting research projects such as a study on the curriculum policy for the local autonomy of education; an analysis of the contents about Korea in textbooks of foreign countries; thinking ability development; a study on the career education; and the IEA study of teaching and learning social values and morality in Korea.

The Educational Foundations and Policy Research Department carries out various research related to basic materials needed for educational policy formation based on historical, philosophical, sociological and psychological foundations of education, and educational system and management for the comprehensive development of Korean Education. Major research areas include educational history and philosophy; educational psychology and educational sociology. Also include are long-term and short-term educational planning; development and evaluation of educational administration and finance; teacher education; comparative education and special education.

The Educational Information Management Department provides information services to those engages in educational research and policy formation and disseminates important findings of research nationally and internationally.

The Computer Education Research Center carries out a variety of R/D activities aimed at applying computer technology to improve educational quality at every school level. Major activities of the department are the improvement of the planning and policy development of computer education; development of computer curriculum, teachers' guides and learning materials; development, evaluation and dissemination of educational software; and development of teacher training programs for computer education.

The Air and Correspondence Education Bureau carries out the activities such as foundations research; producing and broadcasting lecture programs; development of textbooks for the Air and Correspondence High School established in 1974 to strengthen the educational capability of the citizens; distribution of air and correspondence learning materials; and other support activities related to the management of the school.

Finally, the Educational Broadcasting Center seeks to fully explore the advantages of broadcasting media in the education process to improve the effectiveness of teaching and learning. Major activities consist of studies on the potential utility of broadcasting media and the production of TV and Radio programs. The scope of educational broadcasting has extended school beyond education to include pre-school, vocational, adult and teacher education. Its activities contribute to life-long education and help upgrade the quality of the people.

3. The Korean Institute for Research in Behavioral Science (KIRBS)

The Korean Institute for Research in Behavioral Science was established

on 14 September 1967. The Institute is an independent, non-profit and privately- founded organization.

The purpose of the Institute is to contribute to social and national development by conducting scientific research on problems of human beings. The Institute continued to develop and accomplished the following achievements:

- conducting various types of researches, developing materials and providing field guidance to raise the overall level of Korean education in the education field;
- inquiring into attitude changes and socialization process and conducting research on individual and group social behaviors in sociology areas;
- carrying out the research and training programs related to efficient management of organizations in organizational development field;
- conducting the research and development programs aiming at provision of the actual learning experience and environment necessary for the development of the children in critical period of growth in child development area; and
- producing a diverse types of psychological testing instruments to measure psychological characteristics and capacities of students and employed workers.

4. Other Institutes

- The Institute of City and Provincial Boards of Education
- The Research Institute for Higher Education attached the Korean Council for University Education
- Educational Research Institutes attached to Colleges and Universities
- The Academy of Korean Studies (Department of Educational Research)

B. Major Educational Reform Actions

The major educational reform actions being undertaken and contribution of educational research are as follows briefly:

- developing the device of accelerated graduation and grade repetition from grade 4 to grade 12;
- continuously reducing the average number of pupils per class and oversized schools in large cities in primary and secondary schools;
- increasing the enrollment ratio of kindergarten-age children and expanding the number of kindergarten to accommodate children;

- expanding the compulsory education to middle school, beginning with counties of rural areas;

- enlarging the opportunities for free special education including visual, audio, spiritual, physical, emotional areas to be extended to the high school level;

- improving the science laboratories, equipment and teaching aids, and expanding the sanitary and welfare facilities;

- developing the scholastic aptitude test to apply in the process of college entrance examination;

- trial testing of new teaching methods to draw students into critical thinking and logical reasoning;

- including the contents about computers in the related subjects to strengthen computer education, and expanding the extra-curricular activities of computers in primary and secondary education;

- carrying out the evaluation of academic achievement at national level in primary and secondary education;

- introducing the master teacher (Won-Ro Kyosa) system to consider tendency among teachers to aspire for promotion to a higher status in the hierarchy of teaching;

- reviewing the establishment of an Evaluation and Accreditation System towards raising the academic standard of higher education for ascertaining the university's ability;

- increasing the research grants to strengthen the research function of the university;

  granting autonomy in determining tuition fees to private schools to enable them to enhance the quality of program and to reduce the gap between national and private schools;

- offering a wide variety of non-degree courses and programs which serve clientele with diverse backgrounds in colleges and universities;

- financing the establishment of independent educational broadcasting system to serve not only as a medium of instruction in classrooms but also as a conveyer of knowledge, attitudes and values through a nation-wide networks for the development of a life-long education system;

- reallocating the administrative functions between central and local governments to ensure local autonomy of education;

- reducing control and orders of the administrative authorities to the minimum while giving the school principals full autonomy to be creative in managing their schools;

- studying the creation of a Local Education Tax to finance the reform of education and to replace the current educational tax (National Tax).

C. *Research Impact on Reform*

As for the impact of educational research on the above educational reform actions, it would be said that educational research has played a major role in the formation and implementation of educational policies. As far as the revision of the curriculum and teaching methods, enhancement of teacher quality, strengthening the science and technology education, pursuit of excellence in higher education, institutionalization of life-long education are concerned, educational research has a great impact.

However, for the reforms on the local autonomy of educational administration, expanding educational investment, and modification of basic school system, educational research had some impact. Anyhow, quite a number of policy measures for the reforms of education have been studied by the Presidential Commission for Educational Reform which was established to serve as the consultative body to the President regarding policy prescriptions for educational reforms during March 1985 - December 1987 as well as educational research institutes have implemented many reforms in recent years.

Thailand

A. Overview

1. Educational and School Systems

There are four levels of education in Thailand. Pre-school education aims at preparing the child before compulsory education, laying the foundation for further education. Primary education aims at providing the learner with basic knowledge and skills, that is, how to read, write and do arithmetic. Secondary education aims at providing the learner with knowledge and working skills that are for the age, needs, interests and aptitude of the student. There are two levels of secondary education, i.e., lower secondary and upper secondary education. At the lower level, the learner will choose from a wide range of subjects a group of subjects, both academic and vocational, according to aptitude and interest; while at the upper level they will pay more attention to a group of subjects that will eventually become a direction for future employment.

Higher education aims at cultivating and developing student's intellect and ideas for academic advancement. It also aim at creating a task-force at higher academic and vocational levels for development of the country, and at the same time, endowing the student with high morals, ethics, knowledge and appreciation of art and culture. This will enable the graduate to be valuable to other individuals, society and finally to the country.

As for the non-formal education system, the objective is to provide education for the out-of- school and the underprivileged population. This is in order to give people of all ages opportunities to study and improve their occupations and living conditions.

2. Educational Research

Educational research became popular among educational specialists in Thailand about 30 years ago and spread more widely with the establishments of the College of Education (now Sri Nakarin Virote University) and the Department of Educational Research, Faculty of Education, Chulalongkorn University. Later on, it became widely popular in the Thai educational circle.

Educational research in Thailand can be classified into three major groups as follows:

1) Research on Theoretical or Conceptual Development

This group of research covers studies dealing with specific areas of knowledge related to education, i.e. research on psychological aspects of students or research on physical and intellectual development. Most of this group of studies are conducted by university academic staff or graduate students. Some are also carried out by researchers working in various educational departments in the Ministry of Education.

2) Research on Policy and Planning

This group of research covers studies dealing with the educational policy and planning at national or local levels. Some are carried out to assess the effectiveness of an educational development plan or project, with the aim of improving or modifying the educational policy.

3) Research on the Implementation of the Plan/Project

This group of research concerns the assessment of needs and problems, and the evaluation of project implementation at various stages. Some of these works are also institutional research.

B. Status of Educational Research and Development

At present, all agencies conducting educational research are governmental, except one , i.e. the Thailand Developmental Research Institutes (TDRI), an independent organization. However, the main concern of TDRI at present relates more to economics and industrial aspects. Hence the source of funding for educational research is mainly drawn from the national budget. Only a small portion is received from private donation, and some from external aid.

1. Institutions

Institutions or agencies dealing with educational researches can be grouped into the following categories:

(1) Tertiary Institutes including Teachers' Colleges;

(2) Office of the National Education Commission;

(3) Ministry of Education:

- educational agencies in the central sector;
- educational agencies at the regional level; and
- schools.

Researches carried out by these institutions are controlled and partly supported by the National Research Commission. Details are as follows:

(1) *Tertiary education institutions* under the Office of State Universities and educational institutions under the Ministry of Education (36 Teachers' Colleges and one institute of Vocation and Technology) carry out researches:

a) to seek new knowledge, principles or criteria, or to improve the instructional process in various aspects;

b) in co-operation with policy and planning agencies to improve educational policies and planning and help solve educational problems; and in co-operation with other relevant agencies in matters under their

responsibilities;

c) in the form of institutional researches for administrative, management and diagnostic purposes (including curriculum revision and instructional improvement appropriate to the needs of the society).

(2) *Office of the National Education Commission (NEC)* carries out researches at the macro level to identify urgent needs or problems and to find appropriate measures to solve the problems, to improve educational policies and planning, and to follow up or evaluate various educational development projects. Such researches may involve co-ordination or co-operation with researchers from educational institutions and/or from other concerned agencies.

(3) *Educational agencies in the central sector*: These include various departments under the Ministry of Education which have research units of varying sizes. These units carry out researches at both macro and micro levels emphasizing problems or issues specifically related to their own departments, including follow-up and evaluation of works under their responsibilities. Institutional researches may also be conducted in some cases. As for the Department of Curriculum and Instruction Development (DCID), it assigns the Educational Research and Planning Centre (ERPC) to carry out researches dealing with curriculum implementation whereas other centres or offices under the DCID would conduct research-oriented development projects. Most research conducted by DCID are at the macro level.

(4) *Educational agencies at the regional level*: These include agencies at both the provincial and regional levels. (There are 12 Regional Supervisory Units, and 72 Provincial Supervisory Units). Researches carried out by such agencies are mostly action researches for educational development and planning purpose, researches to follow up and evaluate educational development activities, and researches concerning curriculum implementation and the instructional activities in schools under their jurisdictions.

(5) *Schools*: Some schools carry out action researches dealing with instructional problems. They would also co-operate with other related agencies in conducting research works. Researches by schools are just at the early stages and depend on individual school interest and capability.

With respect to the promotion of researches on the part of the Ministry of Education, the ERPC is assigned the role of the co-ordination centre for research activities within the Ministry. Its main duties in this regard are as follows:

a) Promoting and co-ordinating research efforts which contribute to educational development through conducting training, seminars or workshops, establishing a research documentation centre, and publishing the Thai Journal of Educational Research to disseminate research results and relevant progress in the field of educational research.

b) Acting as the secretariat of the Ministry of Education's Educational Research Committee (chaired by the DCID's Director-General) which lays down research policies, suggests topics for research and follows up, controls and monitors research activities of agencies under the Ministry of Education. Projects which require regular government budget will have to be first approved by the Office of the National Research Commission and the budget allocation will then be considered by the Budget Bureau (under the Office of the Prime Minister).

2. Problem

Many problems can be pointed out pertaining to education research in Thailand. However, since the main concern here is the contribution of educational research to the development of educational reform, all problems can be seen as inter-related and lead to one major problem - the underutilization of the research findings in the development of education at practical level.

The causes of this major problem are many. However, the following can be seen as being critical and requiring a solution:

(1) Most research conducted and reported so far has not corresponded to the practical needs or problems of the authority at various levels.

(2) Most research works are survey research, and the opinion based approach is widely used. Not many works go in-depth into the complexity of the problem. Then, the quality of the work is always questioned.

(3) Dissemination of the research findings is mainly through the distribution of the standard-format report. No other format of distributions try to target the specific audience by any other form of dissemination. Thus, the message dose not reach the target group.

(4) On the side of the user, administrators and practitioners still do not give value to research findings. They tend to use their own experience for decision-making rather than consulting the research findings.

Some actions are being suggested and tried out as solutions. These are as follows:

(1) The promotion or doing more research and development projects than solely research or development project.

(2) The encouragement of administrators at operating levels to conduct research (research and development) concerning their own problems.

(3) A campaign among administrators and practitioners to encourage a better understanding and valuing of research as a tool for effective educational development.

3. Trends

At present, implementing agencies and local agencies are encouraged to carry out more research activities, especially in the teacher or school administrator groups. Thus the research trends for the near future may be anticipated as follows:

Agencies at the non-central level (especially those at the regional/provincial/school levels) will carry out a greater number of action researches dealing with curriculum implementation and the instructional process in order to supply information for use in preparing and developing curricula that is more relevant to local needs.

The research topics will be more relevant to prevailing problems and national development. This is particularly so since the Office of National Research Commission, which screens research project proposals and supports the carrying out of researches, has laid down research guidelines for topics to be conducted during 1987-1991. These topics cover the following:

a) Research dealing with the improvement of the educational system.

b) Research dealing with instructional development.

c) Research dealing with educational resource manpower development.

d) Research dealing with the promotion of distinguished performance pertaining to the national culture.

C. *Major Educational Reform Undertaken and the Contribution of Educational Research to the Reform*

There are two major educational reforms being undertaken in Thailand at present. They are;

1. The Extension of Primary Education from Six to Nine Years

During the past two years, this matter was the main concern among high level education administrators and also specialists. Questions arise concerning this matter. Some of these are:

- whether the time is appropriate?
- if extended, should it be compulsory or voluntarily?
- which department, the Office of National Primary Education (ONPEC) or the Department of General Education (DGE), should be directly responsible for the extended classes?
- what type of curriculum is needed?

Early 1989, the decision was made at the Cabinet level that the extension should be non-compulsory and on a gradual basis.

In addition, MOE has further decided that the two offices, ONPEC and DGE would be jointly responsible for the task depending on the availability of facilities and staff in the localities concerned. On the matter of cur-

riculum, the decision has been made that the newly modified curriculum for the three additional years will replace the present lower secondary curriculum. The revision is now in progress by the Department of Curriculum and Instruction Development (DCID).

With regard to the contribution of educational research to the extension of primary education, no specific research findings can be pointed out. However, during the past years, reports on evaluations of educational development paid some attention to the matter. Some research findings proposed, but others objected to the possibility, each with supporting reasons. It is thus not clear whether research findings support or negate the idea. The contribution is that these reports originate the idea rather than decide on the action.

2. The Revision of Primary and Secondary School Curricula

The Ministry of Education enforced the present primary school curriculum and lower secondary school curriculum in 1978, and the present upper secondary curriculum in 1981. Rapid socio-economic, political, and scientific and technological changes directly affect the attitudes and ways of living of the Thai people. Economic conditions of Thailand are starting to change, from it being an agricultural nation to moving towards being a newly industrialized country. This undoubtedly will have a great impact upon national education. Curricula, which are the heart of education, thus need to be revised to keep up with the social changes and academic advances (to better prepare manpower for future needs). Another reason for revision is that the present curricula have been in use for more than 10 years. The Ministry of Education, therefore, assigned the DCID to revise all three curricula during 1989-1990, and have the revised versions ready for use starting 1991.

The curriculum revision was carried out in two stages, namely:

1) preparation before curriculum revision.
2) curriculum revision activities.

With respect to the first stage, many relevant research reports were collected and results were used as data for research synthesis in order to obtain an overview of all the three aspects of the curricula (namely curriculum structure, curriculum implementation, and factors supporting curriculum implementation). Three steps of activities were carried out at this stage as follows:

1) Collecting relevant reports dealing with curricula, conducted between 1979 and 1988 by master-degree students, doctoral-degree students, educational institutions and other related agencies.

2) Collecting relevant articles from newspapers, journals and other printed materials written by outstanding persons in the educational circle during 1979-1988.

3) Synthesizing the data obtained from 1 and 2 using the technique of meta-analysis.

The findings obtained from the preparation stage were clear-cut, extensive and useful for curriculum revision purposes at all the three levels concerned, and were indeed employed as part of the information for consideration during the present stage of curriculum revision activities.

D. Conclusion

Research in education in Thailand has gained more and more popularity since its introduction into the country. More research works come out of the professional circle annually. However, the main problem, widely realized by both the producers and the users, is the under-utilization of the work. Efforts are being carried out to solve the problem. One effort is to initiate research projects, minor and limited as it should be, at the operating level. This is with the expectation that at this level there is greater realization of the problems than there is from outside researchers. They would conduct their own research to solve their own problems, resulting in the relevancy of the research question to the real problem. In turn they would be the first consumer of the research work.

Probably, whether the solution is promising or not, we need time to wait and see the outcomes of this effort.

Western Samoa

A. Major Institutions Engaged in Educational Research and Types of Research Undertaken

1. The University of the South Pacific: Fiji

The University of the South Pacific is a regional institution supported by eleven countries in the South Pacific. The major task undertaken by this institution is to serve the educational needs of the countries it serves. This institution carries out independent research and research commissioned by the individual countries.

The School of Humanities at the University of the South Pacific is the main research body entrusted with conducting educational research for countries of the South Pacific. The School of Agriculture, of USP, located in Western Samoa also carries out research in agricultural education. In addition, the University Centres located in each of the countries served by the university, conducts research on a limited basis on topics relevant to the educational needs of each particular country.

The researches are either carried out by the faculty of the university or are contracted out to research institutions in other countries mainly in New Zealand and Australia. It must be pointed out that in all researches, experts from countries of the region are utilized to the maximum.

2. The National University of Samoa

This University was established in 1984 by an Act of Parliament with particular emphasis on offering higher education to the people of Samoa and to conduct research on problems local to Samoa.

Because the University is still in its infant stages very little research has been conducted. However, the educational faculty have been actively involved in running workshops, seminars and doing consultancy work for the Department of Education. Funding for research carried out by the University are normally in the form of grants through the bilateral aid programme with New Zealand and Australia. Some funds are also obtained from the International University Consortium in the United States.

3. The Department of Education

The Planning and Research Section of the Department of Education was established in April 1989 with your participant as its first director. Prior to this period, formal educational research was non-existent. At present no research is being carried out. However, several topics have been identified to be researched. Among these are:

a) the percentage of illiteracy in the country;

b) the relocation and establishment of new schools (elementary, secondary and tertiary);

c) the viability of certain subjects in the curriculum and addition of new ones.;

d) the migration of teachers (local and overseas)

4. The Primary and Secondary Teachers' Colleges

The faculty of these two colleges carry out research as part of the requirements for advanced degrees done through the University of the South Pacific and other overseas Universities. These Colleges also assist the curriculum development unit by carrying out research in relation to the various subject areas.

B. Major Educational Reform Actions and Contributions of Educational Research

1. The abolition of foreign examinations, viz., the New Zealand School Certificate and University Entrance Examinations. These examinations are now being replaced by local examinations constructed with the assistance of the South Pacific Board of Educational Assessment (SPBEA) located in Fiji. The SPBEA was established to assist countries in the region with the assessment and monitoring of their examinations.

2. The changing of the entrance age at primary level. Prior to the change, students enter at the age of 5 at the beginning of the school year. Now students enter at the beginning of the term after the age of 5.

3. The change from primers, standards, and forms to years in the naming of classes. Previously the classes begin at primer 1 to primer 3, standard 1 to standard 4, and form 2 and form 6. Now, this has been replaced with class 1 to class 12 as follows:

Lower Primary: Class 1, Class 2, Class 3
Middle Primary: Class 4, Class 5, Class 6
Upper Primary: Class 7, Class 8
Junior Secondary: Class 9, Class 10, Class 11
Senior Secondary: Class 12

4. As for the contributions of educational research to the above reforms, it would safe to say that proper formal educational research has not played a major role in the educational reformation. The reforms were undertaken mostly because of the political thought of the time and the wish of the educational leaders. Committees are formed to look into the renovation process of the education system when there is a need.